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The #1 Guide to the Atari ST

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Spring 1988 Volume 2, Number 5

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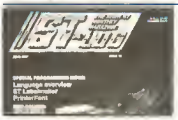

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–Jonathan Sachs, *Micro/Systems Journal*

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THE ST QUARTERLY

START™

The #1 Guide to the Atari ST

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EDITORIAL

If you're a longtime Atari computer user, then you're probably also a loyal follower of Antic Publishing.

We've been staunch supporters of Atari's computers for over six years. We've provided you with Antic, the first monthly Atari 8-bit magazine; START, the first (and most successful) ST magazine; and a fantastic line of Atari software – products that have helped you push your computer's capabilities to the limit.

But today, modern publishing means more than just mailing out monthly bundles of paper and ink. It means information dissemination through *electronic means*, too, and I'm proud to say that Antic Publishing will maintain its role as the leading source of information for the Atari community through *all* means.

The beginning of this year marks the third anniversary of Antic Online, our electronic magazine on CompuServe, the most widely-used online service in the U.S. Since January of 1985, Antic Online has provided Atari technical support, downloadable magazine programs, graphics demos and "instantaneous journalism" – CES and Comdex reports for an information-hungry audience.

And now we're celebrating another milestone. In a joint venture between Antic Publishing and CompuServe, you can now:

- Download commercial-quality software
- Subscribe to START and Antic magazines
- Purchase our award-winning Antic Software and have it sent straight to your home!

That's right – through CompuServe's Softex service, you can download some of our hottest 8-bit and ST titles – programs like Disk Doctor, Graphic Shop, Fractal Factory and the G.I.S.T. Sound Tool, among others. The software is charged directly to your CompuServe account, and you can use it the same day!

With CompuServe's Electronic Mall, you can buy anything from stereo systems and office supplies to clothes and magazines. And if you have a credit card, you can even subscribe to Antic and START by just typing a few keystrokes!

And finally, here's something else to sweeten the deal – if you buy a copy of Antic Software's Flash (the most widely-used ST telecommunications program), you get $15 worth of free time on CompuServe!

So what are you waiting for? For information on Flash, see The Catalog in the center of this issue. And for more details on Antic's renewed electronic presence, take a look at Gregg Pearlman's Online column in this issue on page 79 – then take your mouse and modem out for a stroll through CompuServe.

Jim Capparell

Jim Capparell
Publisher

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READER FEEDBACK

With all the magazine and public-domain programs I have accumulated, I am trying to conserve disk space by organizing programs in appropriate folders. If at all possible, please screen and modify programs you publish so that they will run from within folders (subdirectories). For example, I have placed similar arcade-type games (such as Brickyard and Laser Base) within a folder called ARCADE which resides within a folder marked GAMES. This organization helps me quickly find programs. Unfortunately, both the above-mentioned programs would not run until I placed the picture files in the root directory.

Since the ST has been labeled "The Musician's Computer" with its low cost and built-in MIDI ports, I would like to see more music-related software and articles. I find that most musician-related magazines occasionally feature articles about the ST, but by far favor the Mac and C-64. I believe it is necessary for a magazine like yours to help push the ST as a professional musical instrument. I know you have printed some music articles, but I'd just like to see more.

As an electrical engineer, I'd like to see more information about the ST's hardware/operation. How about some do-it-yourself modifications like a battery-backed clock or memory expansion?

I have read this as a request before, but I also would like to see the number of issues increase. With the short "lifespan" of electronic products, I don't think it's possible to publish too much information.

I was disappointed in the number of programs on the Winter '87 disk. There was quite a bit of room left on the disk, and three programs are not enough. Please fill those disks up!

Thanks for listening. Keep up the good work, and keep up the software/hardware reviews!

Ed Charland
Kansas City, MO

We'll certainly take your suggestions into consideration. This issue's game, Battle for the Throne, does let you put the picture files in the same directory as the game itself. Also, we will continue to bring you MIDI and music programs, reviews of MIDI products and information on the "Musical ST" community. We have run hardware modifications in the past and will continue to do so. For information on memory upgrades and clocks, check out "The Hot Rod ST" in this issue. Finally, we are going to be publishing eight issues of START a year—our four regular issues and four special issues.

OLD MMU CHIPS?

A few months ago I purchased a one megabyte memory upgrade. In the documentation they mentioned a possible problem with older Atari STs concerning the MMU chip. I called Atari and they said that they were not aware of any problem with the older chips. I have experienced an occasional computer lockup with the older chip. Arthur Brown Co. (maker of the upgrade) suggested replacing the old MMU. I went to the computer store where I purchased the machine, but they said they would not sell me a new MMU chip. To further complicate matters your *Atari ST Buyer's Guide* showed a new painting program called Spectrum 512 that looks great. The only problem is that the article mentioned that older STs would need a new MMU chip. If at all possible could you please let me and others in my position know where we can buy new MMU chips?

Michael Gworek
Lutz, FL

Spectrum 512 works on all STs, including Megas, although STs manufactured before December 1985 will need a new MMU chip before Spectrum will run properly. The way to get new MMU Chips is through an authorized Atari dealer; we don't know why your computer store wouldn't order one for you. To find another authorized Atari dealer in your area, call Atari Customer Relations at (408) 745-2367.

STRAIGHT TO THE SOURCE

I would like you to reconsider the recent trend, in the excellent START magazine, of making source code for published programs available only on CompuServe. As a United Kingdom reader of START it is rather difficult and prohibitively expensive to go online to a U.S. database to download this information.

Although the executable programs available on disk are superb in their own right, one of the main reasons for reading START is to learn how professional programmers have solved particular applications problems and optimized their code. I believe that this probably applies to the majority of readers, most of whom use the knowlege gained to raise the standard of their own coding.

Would it not be possible to offer the source code in an alternative way, for example, as a cheaply-printed newspaper-type supplement, or even better, as double-sided disks for magazine distribution?

Please keep up the standard so far achieved which keeps START the world's best ST magazine.

Dave Lea
Ogmore-By-Sea
England

START realizes that many of our readers are programmers who study our source code to improve their own skills, so we have made it a policy to offer the source code wherever possible. There are times, however, when we simply can't fit all the material for an issue on a disk; faced with deciding ▸

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Tired of being restricted to the same old built-in printer fonts? No problem! In WordUp, you can use any size or types of characters on the same line. In fact, we bet you've seen some really nice Macintosh fonts that you'd like to use on your Atari ST and MEGA. No problem! Now, with our new program **FONTZ!** ($34.95), you can use those character sets, and ones created for the Amiga, Degas Elite, and Hippoword with WordUp or the many other programs that use GEM fonts. Also, FONTZ! easily creates new character sizes for your screen and printer. And what if you need a special character that is not supplied with WordUp? No problem! You and FONTZ! can make a quick change to a character set or whip up an entirely new one from scratch. FONTZ! even helps you design logos and access them with a single keystroke.

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whether to put one program with source code on the disk or two programs, we generally feel our readers would benefit more from the extra executable code. Although we recognize that going online to CompuServe isn't an option for all of our readers, it would be even more impractical to use double-sided disks for START—this would make the disk worthless to single-sided disk drive owners. Mailing two disks with each issue or printing the programs separately would be prohibitively expensive. Although this problem doesn't come up every issue, we are open to suggestions of ways to handle it when it does.

LOVES ST WRITER

I bought the 1040ST in November 1987 for the sole purpose of screenwriting (all right—and maybe some game-playing. And maybe music and MIDI programming. But mostly screenwriting). Along with the ST I purchased the most non-user-friendly word processor ever written (Textpro). After many hours of dealing with an unintelligible manual and general disk hell, I returned it, got Arctic Fox instead (great game!) and ordered ST Writer.

The program is fantastic. In less than two hours, I had the program configured to standard screenplay format and was off and writing. My hearty congratulations! You should consider making this program available every month, not just on the Fall START disk, so that others can avoid the horrors of Textpro and its ilk.

Jim Cirile
New York, NY ▸

ALERT BOX

If you are a START Key power user, you may have had trouble getting messages through the desk accessory pipeline to other programs. To fix the problem, remove the line

the_appl=0;

which is located inside the first **if** statement of the procedure **send_message()**.

When recompiling the program, be sure to include the header files on the Winter START disk.

Is the computer giving you grief when you try to run LaserBase? (START, Winter 1987.) Switch to low resolution before running the program and you'll be firing those lasers in no time.

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SYSTEM REQUIREMENT: Atari ST minimum 512K. 0.5 meg drive & color or monochrome monitor.

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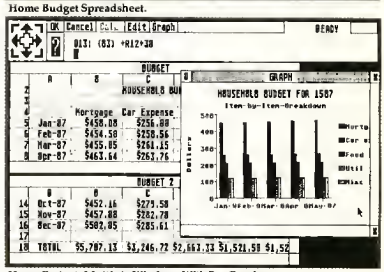

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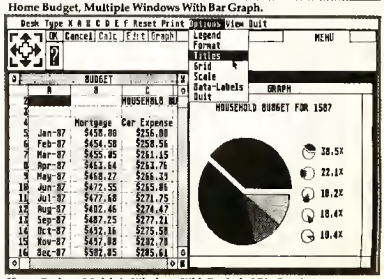

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WANTS DMA SUPPORT—NEEDS SOCKS

I am wondering why no one has decided to market a way for ST users to expand memory, or utilize a chip like the 68020, by plugging it into the DMA port on the back of my ST computer. Both of these features are available for That Other Computer, and I want them for my ST.

Matt Jackson
Aptos, CA

Actually, Matt, the ST's DMA port is specifically designed for peripherals such as hard disks and printers. It's similar to the SCSI port on a Macintosh—TOS can handle up to eight separate DMA devices connected at once. Unfortunately, there's currently no easy way to hook more than one physical device to the DMA port at a time. We've heard rumors of an "octo-bussy" board from Atari, which provides eight DMA device ports, but we haven't seen it yet.

If you need to expand memory, there are plenty of "no-solder" one-, two-, and four-megabyte RAM boards available that install easily inside the ST's case in a few minutes. A 68020 wouldn't do you much good on a current ST, since there's no support for it in the current TOS/GEM operating system. But if you really desire a 68020 or 68030, just wait a bit. Atari's supposedly working on a 32-bit computer to compete with the Mac II and Sun workstations. We've heard it runs faster, contains megabytes of memory, and its graphics will knock your socks off—even if you don't wear socks. ■

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ALICE is also available for the IBM PC for $95

CIRCLE 009 ON READER SERVICE CARD

Do you have questions about using your ST? Is there something you're not clear about? Every issue, START's editors listen to your comments and answer your questions in Dialog Box. Let us hear from you! Our address is:

Dialog Box
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544 Second Street
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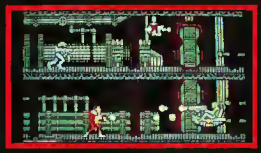
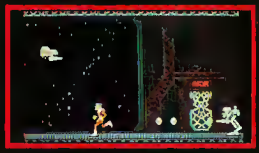
Or leave us a message on CompuServe using the Antic Online Mailbox—just log on and type GO ANTIC.

Due to unforeseen problems, START's Mac/PC column has been delayed and will appear in a future issue of START, The ST Quarterly.

OBLITERATOR





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NEWS, NOTES & QUOTES

One Size Fits All

There are lots of ways to add memory to your 520 or 1040 ST, as Charles Cherry points out in "The Hot-Rod ST" in this issue of START. Unfortunately, most of them only work with one version of the ST—and some are **very** complicated.

"The big advantage to **EZRAM II** is that one board fits all STs," says Michael Jack, Product Manager for Terrific Peripherals. "You only have to remove one chip, the video Shifter, and install it on a piggyback board." And because the EZRAM II comes without RAM chips installed, you can look for your own bargains for 256K chips (for a total of 1 meg of memory) or 1 meg RAMS (for a total of 2½ megabytes of memory).

Why not a 4 megabyte RAM upgrade for the EZRAM II? Two reasons, says Jack. "To upgrade a 520 or 1040 ST to 4 megabytes requires cutting some traces and modifying the motherboard. We wanted a memory board you could put into your ST, then take out in case the computer needs to be repaired. And it draws too much power—running 4 megs on a 520 will be overloading the power supply."

EZRAM II is $139.95 from Terrific Peripherals, 17 St. Mary's Court, Brookline, MA 02416; phone (617) 232-2317.

Life or Death

In most computer games, you can die if you crash the plane or get clobbered by the monster. But a new simulation for the ST puts someone else's life in your hands. **Code-Blue** simulates a cardiac patient in critical condition. You get constant readouts of the patient's vital signs and blood chemistry. Your job: choose what to do to keep the patient alive.

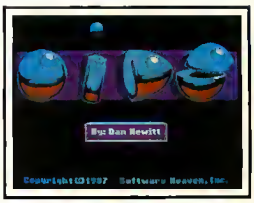
If that doesn't sound like loads of fun, don't worry—it's not intended to be. According to Dr. Ron Schaefer, who created the program, it's designed to run medical students through their paces. "The student can select drawing labs, procedures, and administering the common ACLS drugs. Scenarios are generated either randomly or selected by the user, but no two are exactly alike." In other words, this is one game you can't just memorize your way through.

But what if you run out of ideas and your patient is dying? Don't worry, says Schaefer. "There's an artificial intelligence mode that can assess the current patient status and suggest the next appropriate step." That's a Help key that most emergency-room doctors would love to have.

Code-Blue is $65.95 from Schaefer Supergraphics, 1201 Wilder Ave. #1801, Honolulu, HI 96822.

Where No Oid Has Gone Before

There's a new game from FTL Games, the company that brought you Dungeon Master. In **Oids** the object is to rescue the Oids, a race of mechanical men. The game combines elements from several different arcade-style games, from lunar landers to shoot-em-ups, and you can travel to different "galaxies" where increasingly complex collections of obstacles make the job of saving the Oids more difficult.



Oids also comes with a game editor that lets you construct your own galaxies. And you don't have to keep those new creations to yourself—in fact, FTL is awarding $100 every month for the best original Oids galaxy. For more information on the contest, pick up a copy of Oids—it's $34.95—or write to FTL Games, Oids Galaxy Contest, P.O. Box 112489, San Diego, CA 92111; phone (619) 453-5711.

NEWS, NOTES & QUOTES

Edited by Frank Hayes
START Senior Editor

Dot Dot Dot. . .

Art Director and Film Director, a set of paint and animation programs for the ST, won't be published by Broderbund after all. However, the ST version of **Karateka** should be arriving soon, and other games are in the works. . . Meanwhile, **Art Director** and **Film Director** were last seen looking for a home with another ST software publisher. . . Is **Firebird** going out of business? No—they've just moved from snowy New Jersey to sunny California, and their software will now be distributed by Activision. . . If you've been waiting for the new version of **Real BASIC** from Computer Crossware Labs, you may be disappointed—it won't run on a Mega. CCL hasn't got a Mega yet, and no one there has been able to verify compatibility. . . Maybe you've heard about the secret deal between Atari and Steve Jobs's company, **NeXT, Inc.**, to manufacture low-cost Macintosh clones. Don't believe it—NeXT is cutting secret deals, but not with Atari. . . Besides, all STs can already run Mac software with **Magic Sac+** from Data Pacific. . . Meanwhile, the hardware add-on to let STs run **IBM PC** software is still in the works. It's being developed by another company under contract to Atari, and when it arrives it should work with all 520s, 1040s and Megas. . . If you've got a hot tip or an interesting product for the ST, we'd like to hear from you. Let us know at News, Notes & Quotes, START, 544 Second Street, San Francisco, CA 94107.

TOS and Blitter Update

Some START readers were upset after they saw the item in Winter START saying Atari has no plans for TOS upgrades for existing STs. It turns out that doesn't mean there won't be upgrades—just that Atari hasn't finalized the plans.

As of January 1988, Atari was considering a licensing deal to sell the new version of TOS if they can't come up with a good way to make the upgrade available themselves. And providing blitter chips for 520s and 1040s is purely a matter of availability, according to Neil Harris of Atari—the blitter took forever to arrive, and it's still in short supply. But the company's committed to making the upgrade available to every ST owner. ■

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CIRCLE 059 ON READER SERVICE CARD

Science Fiction Simulations and Submarines

Datasoft, a division of Intellicreations, Inc., has just released three new games for the ST, all of them strategy/action games with futuristic themes.

In **Battle Droidz** you control three different robot warriors as they engage in combat with an alien race. Your battle zone consists of contiguous hexagons, each with unique dangers; to win, you must complete a row of zones across your ST screen. The game includes 3-D scrolling graphics, dozens of landscapes, high score save and other options.

In **Global Commander** you must act as a "planetary policeman," overseeing a network of spy satellites orbiting the earth. You must keep a careful watch over the world's 16 nuclear powers, making sure that each has sufficient food, raw materials and defensive weaponry to feel safe from attack—or feel secure enough not to launch a pre-emptive strike against a neighbor.

But the best from Datasoft I've saved for last: **The Hunt For Red October**, based on Tom Clancy's best-selling adventure novel. In the game, you portray Soviet Captain Marko Ramius, commander of the Red October, a Typhoon-class strategic missile submarine. Your personal mission? To defect to the United States, bringing your priceless submarine with you, while keeping your final objective a secret from a suspicious crew—and a vengeful Soviet Navy. The game's multiple screens allow

The Hunt For Red October.

you to monitor the status of your submarine, evade your pursuers—or else turn and attack. Battle Droidz, $34.95; Global Commander, $39.95; The Hunt For Red October, $49.95. **Datasoft, 19808 Nordhoff Place, Chatsworth, CA 91311, (818) 886-5922.**

CIRCLE 260 ON READER SERVICE CARD

What's The Good Word?

ST owners have a variety of word processors to choose from: everything from public domain classics like ST Writer to full-blown packages like Word Perfect. And now there's another entry: **WordUp**, from Neotron Engineering. WordUp is a completely GEM-based, WYSIWYG word processor that lets you display a large number of font styles: Dutch, Swiss and Roman, in bold, italic, underline and outline, in sizes ranging from 8 to 48 point. You can even display a mixture of these on the same line!

WordUp has standard word processing features (block functions, search and replace, automatic formatting) al-

continued on page 19

Personalized Productivity

Intracorp, a Florida-based company, has just released a variety of unusual software for the ST and other computers. **Video Wizard** is a combination videotape labeler/titler/database program that allows you to identify blank spaces on your tapes, print videotape labels and create character graphics for your tapes. **Bumper Sticker Maker** and **Business Card Maker** do exactly what their titles suggest: they let you print your own customized bumper stickers and business cards. They also include peel-off bumper sticker stock and business card stock. **Love Quest** and **Interaction** let you improve your personal relationships and straighten out your love life. (And they say computers are cold and heartless machines. . .) Video Wizard, $9.95; Bumper Sticker Maker and Business Card Maker, $59.95; Love Quest, $59.95 each; Interaction, $99.95. **Intracorp, Inc., 14160 S.W. 139th Court, Miami, FL 33186, (305) 252-9040.**

CIRCLE 261 ON READER SERVICE CARD

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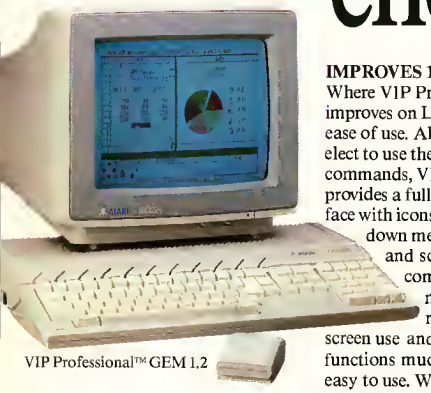

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EXTRA ISSUES!

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PRODUCTS UPDATE

By Jon A. Bell
START Associate Editor

lows you to import graphics (DEGAS or NEOchrome files) into your printouts and supports the Electronic Arts spell checker Thunder! Neotron also offers Fontz!, a font editor/conversion program for WordUp. With it, you can design your own typefaces and convert Macintosh, Amiga or DEGAS fonts into the GEM format. WordUp, $79.95; Fontz!, $34.95. **Neotron Engineering, 908 Camino dos Rios, Thousand Oaks, CA 91360, (805) 498-3840.**

CIRCLE 162 ON READER SERVICE CARD

Chessbase

ChessBase is one of the most fascinating pieces of ST software START has ever seen. ChessBase is a chess database—a data handler that allows you to store and retrieve up to *6,000* separate chess games. You can study world-famous games dating back to the turn of the century or enter your latest bout against an opponent. ChessBase classifies games (either championship games or new ones) based on their openings (the program knows all of them). You can also search through the complete game list and pick out all games possessing common features, such as their openings, the period in which they were played and their players. ChessBase is endorsed (and used extensively) by World Chess Champion Garry Kasparov. ChessBase, $129.95; update game disks approximately $9.95 each. **Sci-Sys, 2301 West 205th Street, Suite 108, Torrance, CA 90501, (213) 212-5412.** ■

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CIRCLE 027 ON READER SERVICE CARD

What the..??

You've just gone to open yet another window in 1st Word Plus or Word Writer ST, but now the Open File option is ghosted. You must already have four windows open—that is the maximum allowed by GEM. You won't be able to open a fifth window on the desktop, either; try it.

Don't Leave Home Without It

Beth Jane Freeman of Wantagh, NY, has this suggestion: If you are in the retail business and accept the American Express card, the little plastic holders for the applications make wonderful holders for 3½-inch disks. They are perfect for keeping the disks you use all the time on your desk.

N!

When Neil Redding of Massachusetts wrote to point out that START Calc (Fall, 1987) was missing a built-in factorial function, START Senior Editor Frank Hayes got to work programming one. This short program stores the displayed number in a register, then keeps decrementing the register and multiplying it by the displayed number until the register is zero. The program is on your START disk in the folder FACTOR (you don't need to unARC it); simply boot your START Calc disk, select START Calc from the Desk menu, and then click on 2nd . to load FACTOR.PGM. If you prefer to type in the listing below, click on Learn, enter the key sequences, then click on Learn again. To save the program, click on 2nd +/−. Once the program is in memory, enter a number and then click on R/S. After a second, the factorial of the number will be displayed. The GO TO 000 at the end of the program saves you the trouble of resetting it every time you run it. Because the calculator is limited in its floating-point math ability, the highest number this function will work on is 33.

Program Step	Calculator Display	Key Sequence
000	STO	STO
1	0	0
2	0	0
3	LB:SIN 003 DSZ	2ND SBR SIN 2ND 0
4	0	0
5	COS	COS
6	X	X
7	RCL	RCL
8	0	0
9	0	0
10	GO TO	GTO
11	SIN	SIN
12	LB:COS 012 =	2ND SBR COS =
13	RN_ST	R/S
14	GO TO	GTO
15	0	0
16	0	0
17	0	0

Got an ST trick or tip to share? Send it to the Clipboard, c/o Heidi Brumbaugh, 544 Second St., San Francisco, CA 94107.

Munch

If one of your favorite desk accessories uses a resource file (for example, Partner ST or START Key), be aware that your ST will gobble up memory that should be free every time the accessory is reinitialized, that is, when you change resolutions. To get back this phantom memory, turn your computer's power off, count to 15, then turn it back on again.

Unfriendly Alerts

Say you've dragged the Drive A icon onto the Drive B icon and told the computer to go ahead with the disk copy, but an alert box jumps up at you telling you that the source disk is not the same type as the destination disk. In order to perform a disk copy, both disks must be formatted in the same way, either double-sided or single-sided. If you don't want to reformat the disk in Drive B, double-click on the Drive B icon to open it, then drag the Drive A icon onto the open window. ■

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THE BUCK STARTS HERE

Easy home budgeting

by Susan Katz

The very word "budget" sends some people running up that hill. But the otherwise odious task of planning your expenses need not be so painful. Here, START presents a six-step plan and a set of home budget templates to let you tame that raging beast called "the home budget."

You'll find the budget templates for this article in the file called BUDGET.ARC on your START disk.

Budget. Just the mention of it drives people in the other direction, over the hill, and into the mile-high pile of bills, real or imagined. It's the stuff of which Blondie and Dagwood cartoons are made, the tripper-upper of otherwise noble people, more guilt-instilling than Jack's mother in "Jack and the Beanstalk" was ever meant to be.

No wonder, then, that recent figures indicate that fewer than 15 percent of American households even have budgets.

But let's backtrack a second here. What if we gave it a different name? What if we called it a spending plan, a plan which would allow you to take the money you earn, spend it wisely, save it likewise, even invest some, and feel good about it at the end of the month?

Think of it. When was the last time you looked at your empty pocket and felt good about where the money went? You can feel good, of course, by making a spending plan—a budget—for your own or your family's needs. And you can do it even more easily with a spreadsheet on your screen.

Janice Holm Lloyd, extension specialist in Family Resource Management for the North Carolina Agricultural Extension Service, notes that few people have budgets of any kind—a fact I could vouch for in my own research. Money issues—and communication about money—are at the center of stress in many families.

Making a budget isn't a penance, though. Lloyd calls it "an enabling tool" and recommends a six-step plan to gain control over your money.

Step 1. Set goals for yourself. Plan for that red Mercedes roadster. Or that new kitchen or beach vacation. Identify the specific financial goals you want to achieve. Ask yourself, "What do I want most?" That way, you'll be better able to get the most out of what you have. Then put your goals into time frames: immediate, a few months from now, in a year, in several years.

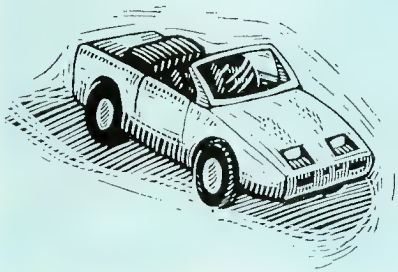
Will you need a new roof in two or three years? A new car? How about higher education for your children? And care for elderly parents? And your own retirement?

If your household includes more than one adult, have all adults do this independently, with pencil and paper. Then share your lists and see how similar they are, and how much compromising you may have to do. ▸

Cristine Mortensen

Cash Flow System	January Budget	January Actual	YTD Budget	YTD Actual	% of Income
Income					
Total Income - Eric	2,386.00	2,386.00	2,386.00	2,386.00	46.97%
Total Income - Joan	2,744.00	2,694.00	2,744.00	2,694.00	53.03%
INCOME	5,130.00	5,080.00	5,130.00	5,080.00	
Expenses					
Mortgage/Insurance	1,165.00	1,165.00	1,165.00	1,165.00	22.93%
Loans	100.00	100.00	100.00	100.00	1.97%
Taxes	890.00	863.00	890.00	863.00	16.99%
Savings	600.00	600.00	600.00	600.00	11.81%
Medical	180.00	80.00	180.00	80.00	1.57%
Auto	250.00	225.00	250.00	225.00	4.43%
Household	500.00	485.00	500.00	485.00	9.55%
Utilities	195.00	140.00	195.00	140.00	2.76%
Personal	400.00	400.00	400.00	400.00	7.87%
Meals out	400.00	425.00	400.00	425.00	8.37%
Clothing	200.00	187.00	200.00	187.00	3.68%
Entertainment	250.00	275.00	250.00	275.00	5.41%
TOTAL EXPENSES	5,130.00	4,945.00	5,130.00	4,945.00	97.34%
OVER/(UNDER)	0.00	135.00	0.00	135.00	2.66%

How you break your budget areas into categories is entirely up to you.



Cash Flow System	January Budget	January Actual	YTD Budget	YTD Actual	% of Income
Income					
#1 Source of Income:					
Eric's	1,886.00	1,886.00	1,886.00	1,886.00	38.65%
Joan's	1,944.00	1,944.00	1,944.00	1,944.00	39.84%
#2 Source of Income:					
Eric's	450.00	500.00	450.00	500.00	10.25%
Joan's	600.00	550.00	600.00	550.00	11.27%
TOTAL INCOME	4,880.00	4,880.00	4,880.00	4,880.00	
Fixed Expenses					
Insurance:					
Mortgage	90.00	90.00	90.00	90.00	1.84%
Homeowners	25.00	25.00	25.00	25.00	0.51%
Auto	50.00	50.00	50.00	50.00	1.02%
Savings:					
Joan	200.00	200.00	200.00	200.00	4.10%
Eric	200.00	200.00	200.00	200.00	4.10%
Joint	200.00	200.00	200.00	200.00	4.10%
Personal:					
Joan	200.00	200.00	200.00	200.00	4.10%
Eric	200.00	200.00	200.00	200.00	4.10%
Mortgage	1,000.00	1,000.00	1,000.00	1,000.00	20.49%
TOTAL FIXED EXPENSES	2,165.00	2,165.00	2,165.00	2,165.00	44.36%
Variable Expenses					
Medical:					
Doctor	100.00	60.00	100.00	60.00	1.23%
Drugs	60.00	30.00	60.00	30.00	0.61%
Auto:					
Parking	45.00	45.00	45.00	45.00	0.92%
Bridge Toll	30.00	30.00	30.00	30.00	0.61%
Maintenance	60.00	0.00	60.00	0.00	0.00%
Gas	60.00	85.00	60.00	85.00	1.74%
Foods					
House	300.00	300.00	300.00	300.00	6.15%
Lunches	200.00	230.00	200.00	230.00	4.71%
Dinners out	200.00	185.00	200.00	185.00	3.79%
Utilities:					
Gas	40.00	50.00	40.00	50.00	1.02%
Water	20.00	25.00	20.00	25.00	0.51%
Telephone	75.00	65.00	75.00	65.00	1.33%
Electricity	70.00	65.00	70.00	65.00	1.33%
Taxes	905.00	878.00	905.00	878.00	17.99%
Home Improvements	200.00	150.00	200.00	150.00	3.07%
Clothing	200.00	187.00	200.00	187.00	3.83%
Recreation & Travel	150.00	200.00	150.00	200.00	4.10%
TOTAL VARIABLE EXPENSES	2,715.00	2,585.00	2,715.00	2,585.00	52.97%
TOTAL EXPENSES	4,880.00	4,750.00	4,880.00	4,750.00	97.34%
OVER/(UNDER)	0.00	130.00	0.00	130.00	2.66%

Step 2. Estimate your income.
List what you can expect to receive for the coming year. Include sources beyond your paycheck, but only those most likely to be ongoing. These might include your paycheck, fees, interest, dividends, rental income, Social Security, pension, trust income, alimony, child support, etc.

Step 3. Analyze your expenses.
If you've been keeping a checkbook and paying for most big expenses by check, your checkbook register will probably be your best source of information here. Go through, item by item, and total up what you've been spending for food, transportation, clothing, etc. The "etc." is up to you, as each household is different, with a different set of needs and different process for working with money.

What you're trying to do here is to come up with as realistic a picture of your current spending patterns as you can. As an organizational expert once said to me about clutter, "This is not a moral statement!" This is a look at where you've been spending your money.

If you haven't been keeping much of a record of expenses, you'll have to "guesstimate." Remember that a budget is not fixed in concrete; it is an ongoing process—a living, breathing, flexible process. If you start out with a "guesstimate" and begin keeping tabs of your spending patterns, you'll soon have a firmer idea of where your money's going. No more guessing. And when you want to plunk down the money for the fulfillment of your dreams, you just may have it.

Here's where your spreadsheet will begin to come in handy. After you've looked at your expenses, group them into categories that

make sense to you (food, transportation, housing, clothing, health, etc.). Does car insurance fit best for you under "transportation" or under "insurance"? How about health insurance? You can find as many different ways of categorizing as there are financial consultants. Do what makes sense to you.

Be sure to include savings and taxes. Uncle Sam'll get the latter, you get the former.

Start with one month. Some of your expenses will be fixed—i.e., a set amount each month (rent or mortgage payment, taxes, savings and investments). Others will be monthly flexible expenses (food, utilities, phone). Still others may be periodic (like health or car insurance, tuition, medical expenses). The rest are discretionary (clothing, home improvements, gifts and entertainment).

For your own purposes, you might choose to list your expenses according to your own categories. Decide how you want to fit these into your spending plan. Do you want to take the total amount, divide by 12, and include that in your monthly budget? Or do you want to include the lump quarterly sum once per quarter? Some advisors recommend, at the beginning, the divide-by-12 method, so you're not hit every third or sixth month with a large payment.

Likewise, Janice Lloyd recommends that if you live in an area of varying seasons, you take the energy company up on their offer to send you a flat-rate bill per month, letting the energy company take care of divvying that bill by 12 and allowing you the luxury of not having to worry when your electric bill jumps from $40 to $170 per month over a three-month period.

Step 4. Enter income and expenses on a spreadsheet.

Entering these figures on a spreadsheet, you have the easy option of jockeying figures around. Once you've set down your amounts in each category, for instance, you can easily see what happens to the other totals if you buy a car with a larger car payment. Or if you decide to cut back on restaurants and alter your food budget accordingly.

Because spreadsheets are relational (numbers in one column affect numbers elsewhere), and because spreadsheet programs do the math for you, you don't have to spend hours penciling all your numbers in only to change your mind later and have to erase and recalculate all your previous figuring.

An organizational expert once said about clutter, "This is not a moral statement!"

Step 5. Keep a record of your spending.

Again, you can do this in whatever way works best for you. Two methods that many people have found work well are the *cash-flow* spreadsheet system and the *accounts* system.

With the cash-flow spreadsheet system, make a list of months as column headings across the top of your screen, with two columns under each month: Budget (what you've planned to spend) and Actual. If you're new to this, you may want to start out with days instead of months, so you can readily track your spending patterns over time. Then at the end of the month, you can enter your totals of what you actually spent under the column marked "Actual."

Down the lefthand side, make a list of your income and expenses by the categories you've devised—either alphabetical, by fixed categories vs. flexible, or whatever's easiest for you to understand and remember.

Look at a calendar; try to remember your periodic expenses (and mark them down) and anticipate ones that might not be imminent. Include installment loan payments on the month they're due, or, alternatively, figure out the total for the year and divide by 12, entering that amount in your monthly expenses. (Some people keep money set aside for periodic expenses in separate checking accounts so they won't be tempted to dig into it when, in the meantime, another category runs dry.)

If you get in the habit of keeping receipts in one convenient place, you'll make your bookkeeping easier. Some people use the old standby, the shoebox, for tossing receipts into. Just make sure it's in a convenient place so the entire family can get used to dropping their receipts into it. Write on your receipts what they're for; it'll make your life much easier when time comes to record them. Then, once a week or once a month, whenever you've designated for bookkeeping, transfer the receipt amounts onto the spreadsheet under the "Actual" column.

See how it works?

A second system is called an accounts system. This is a variation on the old "sugar-bowl" or envelopes system, where one jar or envelope was earmarked for the rent, another for groceries, etc.

To set up an accounts system, list your expenses across the top of the spreadsheet, along with how much you've allocated to spend in each category. Down the lefthand side, start with a row marked "previous balance," and follow down the list by days of the month. As you spend money during the month in the various categories or add money to be budgeted, enter the information and subtract or add accordingly, keeping running totals as you go.

In an accounts system, balances are carried over from one month to the next, making it less exact than the previous system. ▶

YOUR *START* BUDGET TEMPLATES

by Tom Chandler

The two budget templates described in this article are on your START Disk in the archive file BUDGET.ARC. Copy this file and the program ARCX.TTP to a fresh disk. Double-click on ARCX.TTP, and in the box that comes on the screen, type the filename BUDGET.ARC and press the Return key. The disk will spin for a minute or so, the program will print messages onscreen to tell what it's doing, and when it's finished you'll find the spreadsheet templates on the disk. There are two copies of each spreadsheet—one for VIP Professional and one for A-Calc Prime.

First, decide which budget method—the cash flow analysis (the file is called BUDGET1) or the accounts ledger system (the filename is BUDGET2)—you are most comfortable with. Next, load the template into your spreadsheet program following the instructions in your spreadsheet manual. The A-Calc Prime files have the extender .SPD; the VIP Professional files have the extender .WKS.

We have provided templates that will get you started on your budget, but to develop a system that will suit your individual needs you will want to customize the template. Break down your budget categories in ways that make the most sense to you. If you are using the accounts ledger system, adjust it so that spending and deposit amounts are entered daily, weekly, or whatever is most convenient. (In the example on disk, we have entered dates three or four days apart; you may want to prepare rows for each day of the month, or fill in the dates as you go along.) After you have customized the template, be sure to save a copy without any amounts filled, to use as a blank for the next budget period.

ACCOUNTS LEDGER

Enter the projected budget amounts in the appropriate category in the row marked "Previous Balance." Each time you spend or deposit money out of or into one of these electronic envelopes, the balance in the next row will be updated automatically. Be sure to precede amounts of money you have spent with a minus sign. If you are using A-Calc Prime and wish to add new columns or rows, you will have to refer to your manual on how to transfer the formulas over.

CASH-FLOW SYSTEM

Enter your projected income and spending figures in the "Budget" columns. When you total your receipts at the end of each month, enter the amounts in the "Actual" column and watch as the spreadsheet totals your figures and tells you how much you were over or under your projections for both your budget and your actual spending. Keep an eye on this bottom Over/Under row; it will be your key to seeing how changes in your budget (for example, adding a new category) will affect your spending.

MEMORY REQUIREMENTS FOR VIP PROFESSIONAL

If you have a 1040 ST or a 520 with a memory upgrade, we have set up a macro to let you automatically expand the template. If you are using the cash-flow system, to add another monthly "Budget" and "Actual" column, position the cursor to the right of the last month and press Alt-M. To add another row for a new budget category, press Alt-C. To delete a budget category, simply follow your manual's instructions on deleting a row.

If you are using the accounts ledger system and want to make the template longer, you can insert new rows for entering amounts in the middle or at the end of the template. Simply position the cursor immediately below the previous balance and press Alt-A. VIP will enter a new row for entering amounts along with a new row to show the balance.

To add another budget category, position the cursor where you want the new category to be and then press Alt-C. To delete a category, simply follow your manual's instructions on deleting a column.

VIP Professional will load either template if you have a 520 ST without a memory upgrade. However, you won't have much memory to spare if you want to make the template much larger. If you have a lot of budget categories, you may want to save space by having a separate template for each budget period.

PRODUCTS MENTIONED

- **VIP Professional GEM 1.2**, $149.95. VIP Technologies, distributed by ISD Marketing, 2651 John St., Unit 3, Markham Industrial Park, Markham, Ontario, Canada; (416) 479-1880.

CIRCLE 205 ON READER SERVICE CARD

- **A-Calc Prime**, $59.95. Antic Software, 544 Second Street, San Francisco, CA 94107, (415) 957-0886, (800) 234-7001.

Creating the budget's the hard part. Keeping track of it is the payoff—watching where the money's going so you can be actively involved in how much goes for what and begin to feel in control of your cash flow instead of giving that control over to the phone company or Bloomingdale's.

Now you'll be in a position to watch what's happening and compare. What were your actual expenses compared to what you thought they were going to be? With a computerized spreadsheet, you can easily do the arithmetic required to find out either the dollar amount you're over or under for each category, or the percentage over or under. Your computerized spreadsheet will also keep running year-to-date totals as well as project how you're doing for the year.

Whichever record-keeping system you use, computerizing it means you can see at a glance exactly where your money is and where it's been.

Remember the keyword *flexibility*. Again, your computerized spreadsheet comes in handy. After you've been keeping your budget for a month, you'll begin to see your actual patterns of spending and adjust accordingly. Not enough left over last month for dinner and the movies you'd been counting on? Maybe a shift in spending at the office Coke machine would offset enough quarters to add up to movie tickets by the end of the month.

Thinking of taking another job? One that involves a longer commute, a different wardrobe, and different childcare arrangements? Plug those projected items into your budget and see the full impact of the financial changes on your spending plan. Now you can look at it and see, in dollars and cents, whether the change would be worth it.

Wondering how you'll be able to afford college educations for your children? With a keypress you'll be able to see the effect of various ways of cutting back in some categories to add more to a new one called "education."

With all this attention to detail, budgeting does not need to be relentless. Says Lloyd, "We never recommend accounting for every single penny. Close is good enough for us. At the end of the month, set aside an hour or two for bookkeeping time (it's a household chore someone's gotta do, just like cooking food). Depending on how good your spreadsheet is, the ease of running expenses can be enormous. Fill in what your totals were for the month and sit down immediately to compare actual totals vs. projected."

After you've been doing this a while, you may be surprised to find your actual expenses in some categories equalling less than what you'd projected.

Step 6. Analyze and adjust.

From the information you have from step 5, make changes in your budget. With a computerized spreadsheet, you're only a couple of keypresses away, and you can "undo" changes that don't look as if they'll work for you until you come up with a solution you think will.

If you had more income than you expected, what are you going to do with it? You can readily see on your spreadsheet the effect of adding different amounts to your different totals.

If expenditures exceeded your projections, what were those categories? Why did it happen? Does the budget need to be adjusted to allow more for this category?

This step—analyze and adjust—is you taking the reins. This is you deciding the difference at the end of the month between a groan and a grin.

GENERAL THOUGHTS

Who should do the bookkeeping? The one who likes it the most—or hates it the least. If no one enjoys it, agree to take turns. Some people like doing this. Sometimes it's also the person who's the ▸

Cash Flow System	January Budget	January Actual	YTD Budget	YTD Actual	% of Income
Income					
His #1 Source of Income	1,886.00	1,886.00	1,886.00	1,886.00	37.13%
Her #1 Source of Income	1,944.00	1,944.00	1,944.00	1,944.00	38.27%
His #2 Source of Income	300.00	350.00	300.00	350.00	6.89%
Her #2 Source of Income	500.00	450.00	500.00	450.00	8.86%
Joint #1 Source of Income	300.00	300.00	300.00	300.00	5.91%
Joint #2 Source of Income	200.00	150.00	200.00	150.00	2.95%
TOTAL INCOME	5,130.00	5,080.00	5,130.00	5,080.00	
Less taxes withheld	890.00	863.00	890.00	863.00	16.99%
TOTAL NET INCOME	4,240.00	4,217.00	4,240.00	4,217.00	
Fixed Expenses					
Mortgage	1,000.00	1,000.00	1,000.00	1,000.00	19.69%
Insurance:Mortgage	90.00	90.00	90.00	90.00	1.77%
:Homeowners	25.00	25.00	25.00	25.00	0.49%
:Auto	50.00	50.00	50.00	50.00	0.98%
Student Loan	100.00	100.00	100.00	100.00	1.97%
Savings - HIS	200.00	200.00	200.00	200.00	3.94%
Savings - HERS	200.00	200.00	200.00	200.00	3.94%
Savings - JOINT	200.00	200.00	200.00	200.00	3.94%
TOTAL FIXED EXPENSES	1,865.00	1,865.00	1,865.00	1,865.00	36.71%
Variable Expenses					
Medical	100.00	60.00	100.00	60.00	1.18%
Drugs	60.00	20.00	60.00	20.00	0.39%
Auto/gas	250.00	225.00	250.00	225.00	4.43%
Food	300.00	275.00	300.00	275.00	5.41%
Meals out	300.00	350.00	300.00	350.00	6.89%
Home Improvements	200.00	150.00	200.00	150.00	2.95%
Gifts	50.00	25.00	50.00	25.00	0.49%
Electric	30.00	35.00	30.00	35.00	0.69%
Gas	40.00	50.00	40.00	50.00	0.98%
Water	20.00	25.00	20.00	25.00	0.49%
Telephone	75.00	65.00	75.00	65.00	1.28%
Clothing	200.00	187.00	200.00	187.00	3.68%
Cleaners	50.00	50.00	50.00	50.00	0.98%
Recreation & travel	150.00	130.00	150.00	130.00	2.56%
Entertainment	150.00	165.00	150.00	165.00	3.25%
Personal - HIS	200.00	200.00	200.00	200.00	3.94%
Personal - HERS	200.00	200.00	200.00	200.00	3.94%
TOTAL VARIABLE EXPENSES	2,375.00	2,212.00	2,375.00	2,212.00	43.54%
TOTAL EXPENSES	4,240.00	4,077.00	4,240.00	4,077.00	80.26%
OVER/(UNDER)	0.00	140.00	0.00	140.00	2.76%

Accounts Ledger

Budgeted	Loan	House Expenses	Food	Util.	Mortgage	Car Payment	Car Expenses	Medical	Clothes	Personal
Previous Balance	100.00	100.00	250.00	80.00	750.00	125.00	100.00	100.00	100.00	150.00
March 1			-85.00		-750.00	-125.00	-11.00			
Balance	100.00	100.00	165.00	80.00	0.00	0.00	89.00	100.00	100.00	150.00
March 3		-50.00	-25.00				-30.00	-60.00		-25.00
Balance	100.00	50.00	140.00	80.00	0.00	0.00	59.00	40.00	100.00	125.00
March 4		-29.95							-55.49	
Balance	100.00	-29.95	140.00	80.00	0.00	0.00	59.00	40.00	44.51	125.00
March 8			-30.00				-15.00			-60.00
Balance	100.00	-29.95	110.00	80.00	0.00	0.00	44.00	40.00	44.51	65.00
March 15		10.00						-30.00	-25.00	
Balance	100.00	-29.95	110.00	80.00	0.00	0.00	44.00	10.00	19.51	65.00
March 26	-100.00		-50.00	-70.00					-50.00	-25.00
Balance	0.00	-29.95	60.00	10.00	0.00	0.00	44.00	10.00	-30.49	30.00
March 31			-10.00				-5.00			
Balance	0.00	-29.95	50.00	10.00	0.00	0.00	39.00	10.00	-30.49	30.00

Sample printouts from the templates on your START disk.

most computer-involved. Sometimes it's not.

An important aspect of budgeting for a family is that it's a process that helps a family run smoothly. Everyone has a stake in it, and everyone's involved in it, even if only one person is the designated bill-payer.

If you've worked out a system with input from every adult and only one person is the designated bookkeeper, it's not fair to make the bill-payer the "heavy," the one who says no all the time. Treat the family bookkeeping as a job, and the person who does it as contributing that job to the family, with everyone sharing in the responsibility for decisions about spending money.

Include savings in your budget, regardless of how much you have to trim other categories. It's the carrot on the stick that makes all the drudgery of the rest of it worthwhile. Aim in your savings for two to six months' living expenses, expecting the unexpected. (How large a nest egg depends, according to Lloyd, on "what you're willing to do, what kind of training you would need, and your temperament.")

Include a category marked "personal" that nobody has to account for. "It will avoid turning this into a depressing, weary exercise," says Lloyd.

Think you can't create a budget because your income is erratic? "The more uncertain your income," says Lloyd, "the greater your need for a plan."

Want to regain control over your income and expenditure? Want to be able to look at where your money went and feel good about it? Then set up your spreadsheet and make a spending plan—a budget that works for you and your family. Give it an honest shot. With a computerized spreadsheet, you're already ahead of the game. ■

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***Susan Katz is a full-time writer. Her computer column, "Home Tech," appears monthly in the Raleigh, NC* Spectator.**

PERSONAL FINANCE PROGRAMS

Five programs to make and save you money

By Jeffrey Daniels

Since the advent of personal computers some ten years ago, we have all been bombarded with pie-in-the-sky praises and hyperbolic promises of increased productivity, both in the workplace and at home. And there can be no doubt that mainframes and minis, as well as their tiny-tot offspring, have irrevocably reconstituted the technological landscape and, though less dramatically, have come to influence our day-to-day lives.

Yet after all the hype and promise, what remains is that computers do one thing very, very well—data manipulation. This rather unglamorous job description may be further refined to say that the tasks computers are most suited for are word processing, database management and financial analysis (and other forms of "number crunching").

The programs under review in this article fall into the last category—financial analysis. Two of the five, Financial Cookbook and The Isgur Portfolio, stand alone as specialized (though unrelated) programs dedicated to a particular financial project. The other three, Dollars And Sense, Personal Money Manager and Phasar are general accounting packages and will be reviewed later in this article.

Brian Clarke

FINANCIAL COOKBOOK

Financial Cookbook from Electronic Arts is a clever and useful, if unabashedly limited, little financial tool. Its limitation should be neither obstructive nor frustrating to the user in that the program purports to be nothing more than it is: a quick-and-easy way to perform relatively straightforward financial calculations and projections.

At the heart of the program are 32 "recipes" (hence the name *cookbook*). Cookbook's recipes are really plug-in financial templates, each of which is designed to do a specific job. You enter an appropriate set of parameters and instructs the computer to compute the answer based on the information entered. Dutifully and rather quickly, the program stirs the ingredients together and either displays its calculations on screen or prints them to a printer.

Let's take an example. Have you ever dreamed of living on your savings? If so, have you ever actually stopped to consider just how much you'd need to have on deposit, earning such-and-such an amount, say, monthly? And what about inflation? Perhaps $2,500 a month meets your needs today. But ten years hence, will that same $2,500 a month suffice? Probably not; at the very least, you'll want $2,500 a month in *1988* dollars in order to preserve the buying power you have today for tomorrow. And what about taxes? The interest your nest egg earns will, of course, be taxable. How much of that ▸

$2,500 in 1988 dollars will you be keeping after taxes ten years hence? Does a $500,000 nest egg sound like enough? Not to worry—Financial Cookbook will figure it all out for you.

To satisfy your curiosity, at right is Financial Cookbook's calculations for the present problem. How long do you think $500,000 will last earning 10% interest, projecting a 5% annual inflation rate, assuming a 30% marginal tax rate, and withdrawing $2,500 a month in constant 1988 dollars? Less time, I'm afraid, than you may care to know about.

(Jeez, how do those rich people do it?)

At any rate, Financial Cookbook is fun, simple and quite useful. There are recipes to calculate how regular monthly deposits grow over time, how deposits now will grow to have a given target amount of future buying power, how an IRA will grow over time and how long it will last once you start withdrawing from it, what the monthly mortgage payment is on a certain financed amount, what portion of that payment is paid in interest and how much reduces principal in time, the pros and cons of renting or buying one's home, the pros and cons of leasing or buying one's car, and many, many others.

One criticism of the program is that much in these calculations is tax-related. The changes in the tax laws have certainly outdated the information, though not the program particularly. And one further note on the documentation: the program itself is obviously an IBM port (as so much of recent ST software seems to be). The manual, while clear and reasonably well-written, has not been revised for the ST. Little things, therefore, like *command line* for *menu bar* have been left unexpurgated.

6 Living on Your Savings
Finds the effect of withdrawing
constant buying power monthly

Initial savings balance	$ 500000
Monthly withdrawal	$ 2500
Inflation rate	% 5
Interest rate earned	% 10
Compounding periods	365
Marginal tax rate	% 30

Money will last 21 years and 6 + months

Total withdrawn	$ 1116613
Interest earned	$ 880876
Taxes paid	$ 264263

	---------WITHDRAWALS---------			
YR	MONTHLY	ANNUAL	TAX PD	BALANCE
1	$ 2500	$ 30000	$ 15334	$ 505779
2	$ 2625	$ 31500	$ 15495	$ 510434
3	$ 2756	$ 33075	$ 15619	$ 513804
4	$ 2894	$ 34729	$ 15702	$ 515713
5	$ 3039	$ 36465	$ 15738	$ 515969
6	$ 3191	$ 38288	$ 15720	$ 514361
7	$ 3350	$ 40203	$ 15642	$ 510655
8	$ 3518	$ 42213	$ 15497	$ 504601
9	$ 3694	$ 44324	$ 15276	$ 495921
10	$ 3878	$ 46540	$ 14971	$ 484314
11	$ 4072	$ 48867	$ 14572	$ 469448
12	$ 4276	$ 51310	$ 14069	$ 450965
13	$ 4490	$ 53876	$ 13450	$ 428473
14	$ 4714	$ 56569	$ 12703	$ 401543
15	$ 4950	$ 59398	$ 11814	$ 369710
16	$ 5197	$ 62368	$ 10768	$ 332469
17	$ 5457	$ 65486	$ 9550	$ 289267
18	$ 5730	$ 68760	$ 8142	$ 239504
19	$ 6017	$ 72198	$ 6525	$ 182530
20	$ 6317	$ 75808	$ 4678	$ 117637
21	$ 6633	$ 79599	$ 2579	$ 44055
22	$ 6965	$ 45038	$ 421	$ 0

Financial Cookbook's savings calculations.

THE ISGUR PORTFOLIO

Another IBM port, the Isgur Portfolio, is an investment portfolio program that allows you to design and monitor several stock-and-bond portfolios. The package includes two other programs as well: IS Bridge and IS Talk. Let me say a few words about these before moving on to the main program.

The Bridge program allows you to link the Isgur Portfolio and Talk (as well as any other program in the IS series) according to your system configuration, in particular and most important, disk storage. The Bridge disk contains an installation program that provides you with a question-and-answer exchange about the current system and your installation preferences (on which disk will you put Portfolio? etc.). From the main Bridge screen you can run any IS program, and from any IS program you can exit to Bridge. Bridge also includes an easy-to-use memo pad and appointment calendar. The electronic mail system inherent in this feature allows Portfolio to leave messages for the user (for instance, you might specify in Portfolio that you wish to be notified when equity holdings become long-term positions).

IS Talk is a telecommunications program, which is a nice touch: those interested in computer-based portfolio managers inevitably gravitate to the on-line financial services now widely available. If you have an existing account with one of the major on-line quotation services, Portfolio can retrieve quotes independent of IS Talk. Thus Talk is included as a kind of bonus: you might wish to peruse these services for financial data and news other than straight quotes. (The manual also notes that if you aren't a current subscriber to one of the major services, you will have to use IS Talk to establish an account. However, and if memory serves me well, I recall completing the entire start-up transaction with Dow Jones News/Retrieval on the phone—that is, with voice communication—including receipt of my password.) IS Talk is a fairly simple and serviceable telecommunications package, and I can highly recommend it. Included in the package is a complimentary subscription to CompuServe. Another bonus.

Unfortunately, The Isgur Portfolio program itself is less easy to recommend. The program isn't awful by any means; it's simply less than spectacular. It looks and feels cumbersome; the screens are cluttered and hard to decipher, and screen prompts and button labels are often not self-explanatory. The program is GEM-based, but it looks as

though the IBM GEM interface has been ported in the ST implementation, along with the rest of the code. (The ST is such a fine piece of hardware. Why won't more developers sit down with the machine and write *for* it?) And while the program isn't riddled with bugs, it did inexplicably lock up on me more than once.

These critical remarks aside, Portfolio does track and update portfolios of stocks, bonds and options. Buys and sells, realized and unrealized gains and losses, cash and margin account management, calculation of dividends and splits, automatic or manual update of price quotes, year-end reports—it's all here, competently, if ploddingly, executed. But in the age of hotshot Wall Street gurus, there is no real capability of performing serious technical analysis included in the program.

One very nice feature is the program's macro utility, dubbed *Replay*. With Replay, you can record a set of command moves within the program and then call for execution of that procedure at any time. This greatly enhances your speed in performing especially involved tasks (Talk also includes a Replay option). And the recording process is marvelously simple—you merely operate the program as you normally would, and Portfolio, having been previously given the Replay command, records every mouse movement, click, keystroke and pause for that procedure.

The Portfolio documentation is informative and careful not to move too fast, though at times I found myself wishing it would; the manual is a tad overwritten. And again, as an IBM port, the main text of the manual remains strewn with IBMese.

THE THREE ACCOUNTING PACKAGES

Now let us turn to the three general accounting packages under review: Personal Money Manager, Phasar and Dollars And Sense. Of the three, Personal Money Manager is the simplest and least sophisticated, and indeed bills itself only as a computerized "personal accountant." Both Dollars And Sense and Phasar introduce far more sophistication and accounting power, and either is suitable for financial record keeping at home or for a small business.

We'll begin with Personal Money Manager, in part because it's the simplest program and in part to contrast its limitations with the power and versatility of Dollars And Sense and Phasar.

PERSONAL MONEY MANAGER

Personal Money Manager is really just an overblown checkbook register, made unnecessarily complex by the author's insistence on using the standard (among bookkeepers and accountants) "double entry" accounting system. Unless you're familiar with the standard, you'll be at odds with double-entry accounting from the start.

Every transaction requires two entries: one credit against an account and one debit against another. That sounds easy enough. However, because the program isn't smart enough to distribute a given entry to its matching debit or credit account, you're forced to make the entry without, possibly, the benefit of knowing (nowhere in the manual is it explained) that *debit* and *credit* are arbitrary categorizations that mean only the left side (debit) and the right side (credit) of a ledger account. In accounting parlance, these terms have no other meaning. And contrary to what the lay user may think, there is no positive implication inherent in *credit* nor is there any negative implication to *debit*, and vice versa.

Financial Cookbook.

This leads to the following protocol when setting up accounts and entering transactions. Personal Money Manager allows four types of Asset accounts: Checking, Savings, Cash and Charge, in all of which positive amounts are recorded as debits. No problem except that without knowing in advance about the formal semantic subtlety of *debit* and *credit*, you might be left to think, "Well, now, how can that be right? If I've got $2,000 in a savings account it feels to me more like a credit, certainly not a debit." And so it goes for Personal Money Manager Expense accounts. The program allows two types: Income and Expense, in each of which positive amounts are entered as credits. Again, no problem, but wouldn't you want to know why an income account is formally considered an expense account and why, for instance, an expense is entered as a credit? Expenses are sure to feel more like debits to the inititated user.

The real point here is that nowhere in the documentation are such potential confusions addressed. You'll find only a very brief set of expositions of the rules: ". . . Suppose you have $500 in your checking account. That shows up as a $500 debit in the (asset) checking account. If you got that $500 from a paycheck, it would appear as a $500 credit in the (expense) paycheck account." Huh?

If you're content to follow the rules, the program works just fine, but offers nothing more than the bookkeeper's standard journal and ledger. The exception is that it's computer- ▸

ized, so for those bookkeepers out there with an aversion to pencils, this is the program for you.

The program is putatively GEM-based, but only its start-up screen. When you enter information, the interface is clearly unadorned, blinking black cursor TOS.

PHASAR

Phasar is an excellent, if ugly-looking, home/small business accounting program, and uses the *single*-entry accounting system. This means that for most transactions only one account is posted, but the posting is reported according to specific categories of income or expense. This method plays into your intuitive biases and allows you to work with the program without the burden of having to unlearn lay financial concepts.

Indeed, the concern for the user by the people who put together Phasar reaches near-cloying levels. The tutorial (and much else in the manual) is written with the worst sort of "happy talk," and it will take a user more accustomed to being "condescended to" than I to get through it. Here's a sample. After completing the first real work in the tutorial, you're congratulated with these comforting remarks: "You deserve a pat on the back. You just completed a section of the tutorial. This would actually be a good time to take a break and digest the information presented so far (and maybe a snack, too). Meet you in the next section!"

Well, even if you're a little hungry after completing the first section, patronizing language like the above caused me to lose my appetite. And the pity of it is that much of the manual is written in the same style, replete with clever character and company names. To my mind, tutorials ought to be written with a minimum of such stuff, getting to the step-by-step instruction without delay.

However, once you get past the documentation, a straightforward, surprisingly powerful program is at your command. You begin, as with any of the accounting programs, with the job of setting up accounts and entering transactions. This is accomplished with a split-screen format in which the program presents you with a set of user-definable accounts (checking, savings, credit card(s), cash, etc.). You simply select the account and enter the transaction. The program keeps running balances, based on the type of transactions entered (income, expense or transfer), for each account. In the case of a transfer, for instance, from a checking account to a credit-card account (that is, you wish to pay all or part of your credit-card balance from your checking account), then you select the checking account, specify the payee and the amount, and the program automatically debits the checking account and credits the credit card account. Marvelously simple.

The program is also capable of splitting a given transaction between kinds of expenses. Suppose, for example, you shop frequently at a local variety store. You may purchase household items, clothing, groceries and automotive parts—all at the same store and all with the same check. Suppose, further, that you've set up expense budgets according to these categories. Phasar allows you to "split" an expended amount over multiple categories, thereby accurately tracking expenses incurred according to their specific categories.

As stated, the heart of any accounting program is how it handles accounts and transactions, and Phasar does all this with ease. Of course, there would be little advantage to a computerized accounting package if that were all it offered (as, for instance, Personal Money Manager almost does). How the program consolidates the information entered to produce

Brian Clarke

statements and reports is the acid test for any financial program. I am pleased to report that Phasar offers a panoply of useful features of consolidation: you can automatically search accounts according to date, income or type of expense; confirm and reconcile your bank statement with the information entered; produce month-by-month or year-to-date reports; and perform budget analysis, which compares (and can graph) the user-defined budget for a given expense category against the actual amount expended. And there is much, much more.

The Phasar package also includes the PHTAX program, which, roughly, uses the income and expense transactions in Phasar to calculate taxes due. The program even includes an on-screen facsimile of the IRS's 1040 form, although Phasar allows you to design whatever tax forms you wish.

DOLLARS AND SENSE

To me, the most ambitious, well-rounded package among the three accounting packages here is Monogram's Dollars And Sense. While Phasar challenges Dollars And Sense in pure computing and accounting power, the quality of the latter's user-interface outstrips any of the other programs reviewed here.

Dollars And Sense provides a true GEM-based user-interface and supports GDOS (Atari and Digital Research's Graphics Device Operating System), which allows you to display and print financial reports and graphs using custom fonts and device drivers. Unfortunately, the current release of Dollars And Sense includes an early, inferior version of GDOS, and GDOS font and driver support is available only for the Epson FX80 and compatible printers. Further, the program disk includes no screen fonts (though the ASSIGN.SYS file included on disk, strangely enough, *does* name a series of screen fonts for GDOS system use; but this listing is in fact of *no* use since the font files are not contained on disk. What's more, the program would not display the standard GDOS fonts I regularly use with other GDOS applications, but it would print them).

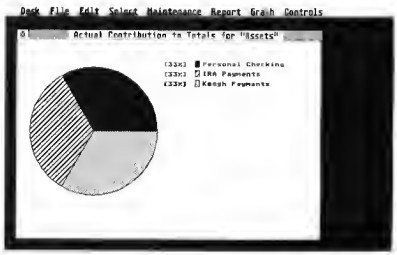
The fact that the program implements GDOS so poorly is not entirely Monogram's fault. Atari was notoriously late in its delivery of a final GDOS program, font and documentation release. I've been assured by Monogram that an updated version of Dollars And Sense is on the way and that the new version will more productively implement GDOS, as well as generally upgrade the product.

Dollars And Sense brings slightly more sophistication to the accounting process than does Phasar, and it looks better, but on the whole the two programs are neck-and-neck in overall power. Dollars And Sense uses the *double-entry* accounting system (every transaction has its opposite, but the program is smart enough, unlike Personal Money Manager, to automatically perform the second entry). Dollars And Sense differs from Phasar in that it uses an account-based system for transactions, whereas Phasar uses accounts and categories of expense and income. The net effect in Dollars And Sense is to more closely approximate a professional accountant's work, although the difference is more cosmetic than substantial, I suppose.

Since the range of tasks that either program can perform is so great, it's difficult to detail all or even most of either one's features. Dollars And Sense allows you to manage budgets, reconcile bank statements, prepare income statements and balance sheets, perform year-to-date summaries and a host of other tasks—even printing checks (although Phasar offers this feature, too). Setting up accounts and recording transactions is painless and easy to understand.

You first create an initial "umbrella" account file, which may include all account types: Assets, Checking, Expenses, Income and Liabilities. Once these accounts are established, you can give them beginning balances (with the exception of Expenses and Income) and monthly budgets. You can also set up variable budgets—that is, expenditures or income budgeted or received only intermittently during the year (as, for example, in the case of purchasing Christmas gifts or the receipt of a year-end bonus). And as when using Phasar, you can set up automatic transactions that represent fixed monthly expenditures or income, like a mortgage payment or paycheck deposit.

The consolidation and processing of information entered are one of the best features of Dollars And Sense. You can graph a series of reports for display to the screen or output to



Dollars And Sense.

a GDOS-compatible printer, or such reports may be displayed as text or printed with a printer.

In sum, Dollars And Sense is a first-class ST application, and as soon as the program's GDOS problems are resolved, Monogram may well run away with the accounting market for the ST. ■

If you'd like to see more articles like this, circle 234 on the Reader Service Card.

Jeffrey Daniels is a free-lance writer who specializes in software documentation.

PRODUCTS MENTIONED

- **Financial Cookbook**, $19.95; **The Isgur Portfolio**, $199.95. Electronic Arts, 1820 Gateway Drive, San Mateo, CA 94404, (415) 571-7171.
  CIRCLE 180 ON READER SERVICE CARD
- **Personal Money Manager**, $49.95. MichTron, 576 S. Telegraph, Pontiac, MI 48053, (313) 334-5700.
  CIRCLE 181 ON READER SERVICE CARD
- **Phasar**, $89.95. Antic Software, 544 Second Street, San Francisco, CA 94107, (800) 234-7001.
- **Dollars And Sense**, $99.95. Monogram, 531 Van Ness Avenue, Torrance, CA 90501, (213) 533-5120.
  CIRCLE 182 ON READER SERVICE CARD

FIGURE YOUR FINANCIAL FUTURE

Calculate your mortgage, plan your retirement

by Arthur Shipley

How much of a mortgage can you afford? When you retire at age 65, will you be able to afford steak—or only spaghetti? Now you can figure your future with START's Retirement Calculator and Mortgage Calculator. They'll let you experiment with the rest of your life without leaving the safety of your ST—and you'll find them on your START Disk!

You'll find the programs for this article in the file PLAN.ARC on your START Disk.

A budget is the perfect tool for understanding where your money comes from and where it goes. But sometimes you need to be able to plan ahead for major changes in your life—like buying a house, or even retiring. It's hard to figure out how much to budget every week or month for these big shifts until you know what the result will be. It can be very confusing, and many people just put it off.

But you don't have to put it off any longer. With the Retirement Calculator and Mortgage Calculator programs on this issue's START Disk, you can figure out how much you should put away for your retirement and how much it will cost each month to buy a house. The programs make it easy—all you have to do is type in your numbers to figure out how much you can afford per month for retirement or a mortgage. Then you can add those numbers to your monthly budget—and you'll be well on the way to a more secure future.

THE RETIREMENT CALCULATOR

Many companies today offer their employees some type of retirement benefits to help them offset the high cost of living when they reach age 65.

These retirement plans vary from company to company, but ours uses a type called a "401k" plan. You take a payroll deduction (up to a certain limit), which the company matches. This money is then invested for you in either an interest-bearing account or in stocks and bonds.

When I first got on this retirement program I did so without any enthusiasm. And no wonder—for the first ten years or so, my retirement account seemed to grow at a snail's pace. But I am now about 16 years into this plan and it is really starting to take off!

Are you getting the most out of your retirement account? Do you even have one? If not, want to see where you could be if you either worked for a company that offered one or if you started an account of your own?

You'll find a program to help you get started on your secure retirement on your START disk. Copy the file PLAN.ARC and the program ARCX.TTP to a fresh disk. Double-click on ARCX.TTP, and in the box that comes on the screen, type the filename PLAN.ARC and press the Return key. The disk will spin for a minute or so, the program will print messages on the screen and when it returns to the Desktop you'll find the Retirement Calculator

program (as well as the Mortgage Calculator) on the disk.

To use the Retirement Calculator, double-click on RETCALC.PRG and follow the screen prompts. Tell the program how much you're starting with, how much you want to contribute each week, what the interest rate will be and how long the retirement program will run. The Retirement Calculator will show you how much money you'll have at the end of each year.

There are many different kinds of tax-exempt retirement plans, including IRAs (for individuals whose company doesn't have a retirement plan) and Keogh plans (for small companies). The Retirement Calculator will find the future values of these accounts, too. You can even use it to find out how much an ordinary passbook savings account will be worth if you regularly add to it, but there's a catch: you have to pay income tax on the interest from an ordinary savings account, so you may have to play with the formulas.

The Retirement Calculator is written in GFA BASIC, and compiled with the GFA Compiler. You'll find the source code on disk in the file RETCALC.LST. To modify the program (for example, to calculate your funds based on daily, monthly or yearly contributions instead of weekly), you'll need GFA BASIC from MichTron; run GFA BASIC, then load RETCALC.LST in using the Merge command. If you don't have GFA BASIC, you can still look at the code or print it out by double-clicking on RETCALC.LST from the Desktop.

After running the Retirement Calculator, you may be surprised at where you could be 20 or 30 years from now. All you need to do is just start today with a reasonable amount and keep on diligently till retirement.

THE MORTGAGE CALCULATOR

If you're like me, whenever you go out for a ride you can't help but notice all of those beautiful homes for sale around town that you think you could never afford. Ever wonder how much the mortgage payments must run?

START's Mortgage Calculator will help you play with some figures and answer enough questions to get an idea of how close you really are to buying that dream home. Suppose you've got an extra thousand dollars you could possibly put on the purchase but can't stand to part with. Just how much difference would it make in the long run? How much each month? You say you can't afford $20 or $30 a month more to finance for 20 years instead of 30? Got any idea how much that would save in the end? And just how important is it to save 1 percent interest on the mortgage?

Ever wonder how much the mortgage payments will run?

When you're house-hunting, without an amortization table you can't even figure what your monthly payments will be without a real-estate agent along to tell you. Mortgage Calculator will figure out your monthly payments, and tell you how much of each house payment goes to pay the interest alone.

The Mortgage Calculator is on your START disk in the compressed file PLAN.ARC; if you haven't already extracted the files from PLAN.ARC, check the instructions for the Retirement Calculator.

When you double-click on MORTCALC.PRG, you can use the mouse to select between the two sections of the program: the Mortgage Calculator and the Amortizer. Under the Mortgage menu, you have three choices. You can calculate your loan payments, if you know the interest rate and number of payments (no tax or insurance); the number of payments, if you know the original value and interest rate; or the loan amount, if you know the interest rate and number of payments.

The Amortizer will print out an amortization table for you showing every payment complete with how much of each payment goes towards paying off the principal and what part actually goes towards paying the interest for that month. If you don't want to print out the entire table, the program will display only the final amortized results.

The Mortgage Calculator can really make it possible to figure out how much you can afford to pay for a house. By experimenting with different down payments, interest rates and financing terms, you'll be able to see just what it will take to get the house you want. Just as informative is the Amortizer—you'll discover that, for the first few years of almost any mortgage, virtually every cent you pay will go to pay the interest. Talk about an eye opener!

Like the Retirement Calculator, the Mortgage Calculator is written in compiled GFA BASIC. You'll find the source code on disk in the file MORTCALC.LST; you can list it by double-clicking from the Desktop, but you'll need GFA BASIC to modify the program.

Whether you are planning on buying a house or just like to play "What If?" I think this program will amaze you. Before you agree to any financing terms, run a few sets of figures through Mortgage Calculator to make sure you're making an informed decision. ■

If you'd like to see more articles like this, circle 271 on the Reader Service Card.

Arthur Shipley is a superintendent for an electrical construction firm in Albany, Georgia. He uses his ST to run a BBS for local amateur radio hobbyists.

Taxes The Easy Way

1987 tax forms for VIP and A-Calc

BY TOM CHANDLER

Now you can use your Atari ST to help you with your 1987 federal tax return. On the START disk is a file named TAX87.ARC. It contains two templates—one for use with A-Calc Prime and one for use with VIP Professional, the Lotus-compatible spreadsheet from VIP Technologies. Note: The VIP version of the template requires either a 1040 ST or a 520 with a megabyte of memory.

Like some help with your taxes? The tax templates on this issue's START disk can help you with the following forms:

1987 IRS 1040 Long Form
Schedule A (Itemized Expenses)
Schedule B (Interest and Dividends)
Schedule E (Supplemental Income Schedule)
Form 2106 (Employee Business Expenses)
Form 8582 (Passive Activity Loss Limitations)

WHAT YOU NEED

To use this template, you'll need an Atari ST, a copy of VIP Professional or A-Calc Prime and your official Internal Revenue Service 1987 tax instructions and forms. It's also helpful to have a printer, since it's easier to copy the figures from a printout than from the screen. If you've never used a spreadsheet before, begin by studying the manual. It may take a little time to learn the ins and outs, so don't wait until April 14th!

You'll find the templates mentioned in this article in the file TAX87.ARC on your START disk.

The templates are on your START Disk in the archive file TAX87.ARC. Copy this file and the program ARCX.TTP to a fresh disk. Double-click on ARCX.TTP, and in the box that comes on the screen, type the filename TAX87.ARC and press the Return key. The disk will spin for a minute or so, and when it's finished you'll find the tax templates on the disk. If you are using VIP Professional, use the file TAX87.WKS; if you have A-Calc Prime, use the file TAX87.SPD.

TAX SPREADSHEETS

Spreadsheet programs are ideal for preparing tax returns. You provide the personal data, then customized formulas tell the program how to crunch the numbers.

Each data element or formula is entered in a spreadsheet cell–similar to the lines and columns on your tax form. As your data changes (you find another stack of receipts) go to the proper cell, add in the additional data, and your entire tax return will be recalculated

START's 1987 tax template can be used for many different taxpayers–just save the original version on disk. It should take only about an hour to enter each individual's personal information, and you can save each tax template on disk under a different name.

As you fill in the spreadsheet, you'll need the 1987 IRS tax instructions and forms close at hand. The spreadsheet doesn't duplicate the tax forms exactly, and abbreviations are used wherever possible. But the template follows the IRS line numbers, so you won't get lost. As an extra precaution you might save a backup "unfilled-out" copy before entering any information onto your working copy.

Perhaps you're one of those taxpayers who must fill out forms that are not on the template. If so, you will have to fill out those forms manually, and enter the totals into the appropriate cell on the template. Once this is done your ST can add them in with the rest of the numbers that you've entered.

Once you've entered information into the spreadsheet, you're ready to print out the information, following the instructions in your spreadsheet manual. Using the tax template will give you almost all the information you need to copy onto your tax forms. I say *almost* because the template calculates virtually every line *except* the actual tax you owe. Putting all the tax tables into the template would chew up lots of memory. Instead, figure out your Net Taxable Income on the template, then just look up the matching Tax Table amount in your instruction booklet from the IRS as you fill out your actual 1040 paper form.

It is wise to save your work just in case you need to change something later. This is done with the File Save command. Again, we highly recommend you save your completed work under a different name.

Please examine your template results with great care. If you have any doubt about the accuracy of your findings, get advice from a registered tax preparer. Data entry mistakes and programming errors have been known to occur. START cannot be responsible for any mistakes that might be made in your tax payments as a result of using this template.

Here's hoping this year's tax preparations are the easiest ever! ■

If you'd like more articles like this, circle 250 on the Reader Service Card.

Tom Chandler is one of Antic Publishing's Retail Account Representatives.

PRODUCTS MENTIONED

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EARTHQUAKE!

The ST shakes out startling new data

by Giselle Bisson

The Atari ST is being used in flashy ways by rock musicians, special effects people, lawyers and graphic artists. But sometimes, the quiet uses of the ST are the most fascinating. Join START as we talk to Richard and Gladys Hansen of the San Francisco Academy of Sciences and discover how the ST is being used to uncover new—and frightening—information about earthquakes.

At the corner of Third and Mission streets, San Francisco, third week of April, 1906. This is an example of the type of photo that city authorities released to the public. Authorities believed the damage shown in this photo would be perceived as being caused by the fire—not the earthquake.

Photos courtesy of San Francisco Earthquake Research Project except as noted.

EARTHQUAKE . . .

Until I met Gladys and Richard Hansen, I thought fire was responsible for most of the damage done in the 1906 San Francisco earthquake. And until very recently, so did most of the scientific establishment. But all of that is going to change soon as the Hansens completely rewrite the history of earthquake knowledge—with the help of Atari STs.

"We're shocking the professional earthquake world," Richard says as we sit in the spare bedroom he uses as an office. A 3-by-5 card file reaches from floor to ceiling, and stacks of paper, books and box after box of paper file folders line the walls. "Everything in that card file and most of what's in the room is also in here," he says, pointing to the Atari 20-megabyte hard disk drive on his desk.

Imagine searching through all that paper to find, say, every comment about every house that burned in a particular neighborhood. Try flipping through cards to narrow that down to every brick house, and you get an idea of how a personal computer can speed things up.

With the help of Atari ST computers, Hansen and the other members of the San Francisco Earthquake Research Project are rewriting the history of San Francisco's great 1906 earthquake. (A "great" quake is classified as one with a Richter number of 8 or more, and one that spreads the "shaking" over a very large area. For example, Mexico City was devastated in 1985 by an 8.1 Richter quake whose source was 250 miles away.) Their conclusion is indeed startling: city officials and business owners deliberately covered up the damage because they feared the awful truth would prevent them from getting the money needed to rebuild a devastated city.

The Earthquake Research Group consists of four volunteers: Hansen, a former fire department photographer who, since 1970, has given presentations about earthquakes; the project's director (and Richard's mother), Gladys Hansen, the city archivist and author of *The San Francisco Almanac*; David Fowler, a former news anchor and an advisor at the Federal Emergency Management Association (FEMA) in Maryland; and San Francisco Fire Department Chief Emmet Condon. The members have put countless hours and about $10,000 of their own money into the project.

Mary Lowry Pellegrin

Richard Hansen

FROM CARD FILE TO DISK FILE

This massive research project just couldn't be done without the help of a computer database to sort and tabulate the 35,000 records and personal narratives the researchers have accumulated. Each fact about or reference to a disaster is cross-referenced by street address and name and then keyed to the source material. And this is only the tip of an enormous and fascinating historical iceberg.

It all started rather innocently as a genealogy project 20 years ago. People kept badgering Gladys at the library and asking, "Did my relatives die in the great earthquake?" Using eyewitness reports, letters, diaries, historical documents and coroner's records, she filed the information on 3-by-5 index cards.

"It started to be a great machine, just the card file alone, giving us answers to a lot of questions that have always bothered historians," she says.

The official death toll set by the SF Board of Supervisors in 1907 was 478. After accounting for different spellings in newspapers, Gladys found that there were really *800* deaths. Gladys then started a national letter search to genealogy societies asking for personal letters. When the death toll climbed to over 1,000, she knew she was on to something big, but she wasn't sure *what*.

Her son Richard got interested when he noticed that many of the historical photos were heavily retouched to disguise the earthquake damage. Fowler, a San Francisco broadcast reporter who had done a few news stories about Gladys, volunteered to enter the information about the deaths into his Apple IIe computer.

One day, Fowler called Richard about midnight. "Guess what?" he said. "It looks like a pattern." According to Richard, "We went further and entered the injured, too. We drew our own map of the firm land just by dead and injured alone. Then we realized that some parts of the city didn't correspond with what is accepted today as firm and infirm (safe and unsafe ground)." They discovered what later became clear: somebody had intentionally covered up the deaths.

"The government considers anyone in a fire who dies up to one year later a fire casualty, because burns often don't kill until much later. So we called some of the great names in seismology and asked, 'What is an earthquake death?' They came to the conclusion that an earthquake casualty includes those who died up to a year later. The toll climbed again.

"The funny thing that always kinda stuck as a thorn in people's sides is, well, some of the narratives are so horrible, but today's books make it sound like a fun thing, you know, 'Go down and watch another block burn,'" says Richard.

Currently, all earthquake projections

are based on a book called the NOAA (National Oceanographic and Atmospheric Administration) Report, which is used as the "disaster bible" by fire departments and emergency planning agencies. Look up a city block in the book, and it tells you what kind of injuries—and deaths—to expect. "Now the guys who wrote that are on our advisory board," Richard says, "and we're completely changing the report."

When the deaths were plotted according to location and analyzed in a database, a pattern emerged, creating a new map of destruction. Many areas of the city previously thought to be firm were actually devastated. Over 80 years later, in 1988, the consequences of the Hansens' research will shake up San Francisco again.

Each insurance case, narrative or photo had to be cataloged on a different file within the database and keyed with information so it could be cross-referenced. Luckily for the Hansens, Richard Frick, Atari's Director of Software, found out about the group and graciously arranged for Atari to donate five 1040 ST computers, five 20-megabyte hard disk drives and copies of Datatrieve, a database from Abacus Software. The group even convinced Abacus to modify Datatrieve to allow more record entries.

The computers have been the only donation so far. "The 3-by-5 cards almost bankrupted us," Richard said, "and we still can't afford photocopies at the National Archive at 30 cents a page.

Atari STs are rewriting the history of Son Froncisco's great 1906 earthquake.

"We collated earthquake information from every conceivable source and discovered that *nobody* has cross-referenced this information before," Richard says. "Once it was in the ST, we discovered our original conclusions were wrong." They were able to debunk the myths that most people died in fires and that building standards at the turn of the century were *less* stringent than today. "But the best thing about the ST computer is that it forces you to be organized," Richard said.

An example of a photo retouched to hide earthquake damage. Buildings with collapsed walls have been painted over to appear intact.

WE'RE NOT READY

Richard and I went to his basement, which the Hansens have transformed into a neighborhood disaster preparedness center. Here, another 1040 ST records historical photos with a video camera and digitizer. There are Ham radios, cameras, a fully stocked darkroom and, not surprisingly, a cache of canned foods and earthquake rations lining an entire wall. Richard has also completely reinforced the foundation of the house.

Over the past two years, scientists and seismologists have trekked to the door of the Hansens' quiet house out near San Francisco's Ocean Beach. Now the project's official headquarters have moved a few miles away to the California Academy of Sciences. Producers from the PBS television series NOVA are preparing storyboards for an episode on the group's research that will be broadcast next September, and the project has also attracted the attention of *Smithsonian* magazine. In addition, the group has written an illustrated book on the earthquake, recently released by Cameron and Company Publishing. This collection of narratives and photos also was compiled with the help of the Atari ST.

Because of the group's findings, building codes, standards and insurance rates (perhaps even real estate values) will have to change. But most important, Richard stresses, so must earthquake preparedness measures (and expectations) in San Francisco and the rest of the world.

The job's not over yet. "We have at least 20 years worth of research left to do," Richard says. "We want to visit every historical archive in the West. We also want to find people who left the West with Kodak pocket cameras. Businesses paid over $1,500 in 1906 dollars to buy up photos of damaged buildings, ▸

Golden Gate Avenue, near Hyde Street, San Francisco. An example of buildings that had been built on infirm (swampy) ground. When the 1906 earthquake hit, swampy ground turned into liquid—a suspension of dirt and sand in water.

and we want those photos." Incredibly enough, some of those people who sold photos bought new *houses* with the money.

DEBUNKING THE MYTHS

"San Francisco glows as a huge furnace," reported the *Oakland Herald* on April 10, 1906. "From the hills behind Oakland, San Francisco provides an awful, indescribable spectacle. By day, beyond the glimmering bay, there rose a dreadful pall of smoke. As darkness fell, the fires glowed into sight like a large row of open furnaces. Night turned the cloud into a pillar of fire that rose miles high and miles wide."

From today's perspective, the 1906 San Francisco quake is especially important because, to date, it's still the only major quake to occur *within* a relatively modern city—one with telephones, telegraph lines, newspapers and the like. It's also different from the recent Mexico City quake because so many of San Francisco's buildings affected by the quake are still standing, available for study. Based on the Hansens' research, NOAA will have to change the "official" death toll of 500 to over 3,000. That will also change the projections for a future San Francisco earthquake from the current estimate of 11,000 deaths in the entire Bay Area to as high as 60,000. "I know a similar quake will occur someday," Richard says.

When Richard and Gladys talk about earthquakes, there is a sense of impending doom in the conversation. When they talk about the coming "Big One," it's tempting to dismiss them, much as you might dismiss UFO disciples or reincarnation proponents. But they talk as if they know something we don't. They do.

"A lot of the facts we unearthed really scare us," Richard says. For instance, it seems earthquakes are bad for business. They discourage investment from outside the city. So powerful businesses covered up the damage by dynamiting buildings, burning them down and destroying or retouching photographs. "We have buildings we call 'magic buildings.' Historically, these were earthquake survivors where 'nasty fire gouges' did the damage," Richard adds. "But when we added narratives to the database, we found, hey, in this guy's narrative, that building is wrecked!"

The researchers have also debunked the old "brick is more dangerous than wood" myth. According to their findings culled from the database, no more than 10 percent of the deaths occurred in brick buildings. Brick crumbles sooner than wooden buildings, but brick crumbles more evenly, and with fewer injuries. "My boss, Emmet Condon at the fire department, finds this hard to take," Richard says. The research team also theorizes that buildings designed in accordance with today's standards are actually much *weaker* than those designed immediately after 1906.

PANDORA'S BOX

The research group has opened up a Pandora's box of historical controversy. "We're seeing the doors open, but we can't trot into every door," Richard says, although he rattles off the secrets behind some of the doors. "Buildings insured in 1906 were fraudulently collected on. The damage was felt over a much larger area than people think. We've found disturbing evidence of racial discrimination in relief efforts. Property owners launched a massive campaign to buy up photos of damaged buildings. Police even tried to steal a hose from the Fire Department."

The political scandal and ethical questions are overshadowed by the immediate reality that San Francisco, like most other cities, is drastically unprepared for another earthquake of that magnitude. "The standards for firm and infirm ground must be changed, electrical damage to cables and vaults, computer lines . . . It's gonna go," Richard says emotionally, clenching his fists.

"Or what if the Big One came and people mistakenly thought it was a bomb?" he asks rhetorically. Prior to 1900, earthquakes were thought to be "air quakes" because of their deafening sound. Through eyewitness accounts, the group learned that the sound of the 1906 earthquake, believed to register 8.7 on the Richter scale, was far louder then ever previously believed. In one account, a man watched a building being dynamited two blocks away, but could not hear the explosion over the deafening roar of the earthquake.

"In not a single account was anybody standing," Richard says. "That's scary." Some of the narratives he describes are horrifying tales of apocalyptic destruction. Terrified people were knocked to the ground, clutching the pavement as the streets buckled and the earth undulated violently. In many cases, people all over the Bay Area were knocked down with such force that they suffered broken fingers, wrists, ankles, arms and legs.

"The citizens deserve to know," Richard says. "If we have another quake of 1906 magnitude, the sound will be deafening and there will be damage to the entire region, from above Eureka to below San Jose. Nobody will stand." Gladys's accounts also show a city tormented by arson, dynamiting, a military going wild under eminent domain, and looting in the San Francisco mint. "Military installations were a mess, too. If you wanted to attack the coast, that was a good opportunity," Richard adds.

Richard's comment brings up another interesting point. In 1906, *10 percent* of the United States' military personnel were stationed in the Bay Area. Buildings collapsed as far east as the Sierra Nevada mountains, and telegraph lines were out as far as Utah. Amazingly enough, Washington found out about the quake from an uncoded military cable sent out over the Pacific, out to Hawaii, then past Japan and the Far East until it reached Europe and was routed to the nation's capital. Since Japan had attacked Russia with impunity just the year before, Washington officials panicked that the cable would be an enticing invitation for the Japanese to attack a devastated West Coast. A cable came back—again, going completely around the globe—and advised the Presidio Army Base that "there was no military damage."

THE STORY TODAY

In January 1987, the research group members were appointed Associates in Seismology at the California Academy of Sciences. "As a team, these individuals have compiled extraordinary files on the 1906 earthquake, files that will have a significant impact on the ultimate interpretation of that disaster," said Dr. Peter Rodda, Chairman of the Academy's Department of Invertebrate Zoology and Geology. "The research will not only cause history books to be rewritten, but will be of inestimable value to seismologists, engineers and city planners," he said.

HOW YOU CAN HELP

For 20 years, Gladys Hansen has pieced together the earthquake puzzle with the help of people who had family in San Francisco at the time and offered diaries, letters and news clippings. Of particular help are photographs taken by survivors that document damage. "Even a picture of a home with a missing chimney provides valuable information," she says. All materials will be duplicated and returned.

If you can help with photos, accounts or donations of Atari ST software or hardware, please write to: San Francisco Earthquake Research Project, California Academy of Sciences, Golden Gate Park, San Francisco, CA 94118. ■

If you'd like to see more articles like this, circle 152 on the Reader Service Card.

Giselle Bisson is a San Francisco freelance writer. Her articles have also appeared in Antic *and* Model Shopper.

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Battle For The Throne

Bandits, wizards, and swamp trolls

BY TERRY PACK

Sarah Waldron

In an ancient, faraway land, the King lies near death—and the Princes of Thrania prepare for war! So get out your broadsword, muster your armies, and get ready to fight your fellow princes for a chance to become Tharn V, the next king of Thrania as you battle for the throne! ▸

You'll find the program for this article in the file BATTLE.ARC on your START Disk.

In a distant ocean lies the island of Thrania, a land of fertile plains, dark forests, impassable mountains and dangerous swamps. Thrania was settled long ago by a wealthy family and their servants. Over the centuries, the family built a number of castles and a civilization of sorts spread across the island, until at last the kingdom of Thrania was established.

There has never been a peaceful succession in Thrania. With no precedent of passing the crown, every time a king dies there is a long and bloody war, sometimes lasting years.

Now old king Tharn IV is on his deathbed, and each of the four royal princes is calling up his troops. To complicate matters, there is also Crobvar, who claims to be Tharn's illegitimate son. Crobvar was last seen disappearing into the forest with several gangs of bandits and cutthroats.

THE GAME

Battle for the Throne is a strategy game for one to four players. Each player takes the role of one of Tharn's legitimate sons, battling for control of the kingdom.

You'll find the game in the file BATTLE.ARC on your START disk. To play the game, first copy this file and the program ARCX.TTP to a fresh disk. Double-click on ARCX.TTP, and in the box that comes up on screen, type the filename BATTLE.ARC and press the Return key. The disk will spin for a minute, the program will print messages telling you what's

Battle For The Throne

happening and when it's finished you'll find the uncompressed game files on disk. The program must be run in low resolution, and if it's in a folder, the files TITLEPAG.NEO and TERRAIN.NEO must also be in that folder.

When you run BATTLE.PRG, each player becomes a Prince of Thrania and receives a castle and ten troops. They're displayed on a map of Thrania that doubles as the playing board. The troops begin in the castle, but can move to any adjacent square on the board that isn't occupied by someone else's troops.

The number at the top of each square indicates the number of troops there. When it's your turn you can move your troops with the mouse; click once on the square where you have troops, then again on the adjacent square where you want them to go. After you've selected your move, a dialog box will ask how many troops to move.

During your turn you can also attack adjacent squares that are occupied by the troops of your opponents (including

Don't forget, you need to finish off those bandits, too!

Crobvar and his bandits). Depending on how many troops are on each side, either the attacker or defender (or both) may lose troops in a battle; the side that finishes the battle with the most troops wins. The defender's terrain determines how difficult the attack will be. Castles have the best defense; clear terrain has the worst. Be careful when moving into swamps, as your troops may sink in the quicksand or be attacked by a host of swamp evils.

TERRAIN EFFECTS:

Terrain	Defender's advantage
Clear	+ 10%
Forest	+ 20%
Swamp	+ 40%
Village	+ 50%
Castle	+200%
Lake	Impassable
Mountain	Impassable

TAX AND SPEND

Each year (every 2-6 turns) you collect taxes based on the population of your territory. The population is the other number in each square on the map. You get 1,000 gold pieces for each household. You can either spend the money you collect or save it in your treasury.

Raising additional troops costs 2,000 gold pieces each. However, due to lags in transport and communication, taxes collected this year can only be used to build troops in castles. Money stored in your treasury from the previous year can be used to build troops anywhere in the territory you control.

If another player captures your castle, you cannot collect any taxes until you win it back or capture another castle.

Plan your spending carefully. You'll find that it doesn't pay to hoard too much gold in your treasury. You'll also find that no battle is a guaranteed victory—a few defenders in a castle may still survive against a huge attacking army. And watch out for plagues, droughts, floods and snowstorms—they may change your battle plans in a hurry!

The game isn't over until only one prince survives—and don't forget, you need to finish off those bandits before you can wear the coveted crown of Thrania.

LONG LIVE THE KING

If you're interested in finding out how the program works, take a look at the files BATTLE.PAS and BREAKDWN.TXT. Battle for the Throne is written in Personal Pascal, but even if you're not a programmer, you may want to read the program breakdown just to get clues to better strategies.

Then practice battling bandit and brother, use your taxes wisely, and watch out for blizzards and wizards in your quest to become the next king of Thrania! ■

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Terry Pack is an electronics service technician and a longtime ST user and game fan.

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CIRCLE 019 ON READER SERVICE CARD

Exploring The ST's Filing System

by Carol Ann Brimeyer

The ST's Desktop is more than just a pretty face. Behind its casual look is a no-nonsense filing system that can keep your disk information snappily organized. Here's how!

On the ST Desktop, disk icons look like what they act like: filing cabinet drawers. When you open a disk icon and display its directory window, you can see the names of the files on the disk.

From the View menu, you can choose how you'll see the filenames, with either the Show as Icons or the Show as Text option. When you first turn on your ST, it automatically selects Show as Icons, and the files appear as small pictures in the directory window. Those small pictures—called *icons*—do more than pretty up the display; they actually show you what kind of files you have.

ICONOGRAPHICS

One file icon looks a little like a small desktop. This means the file is a program that your ST can run to accomplish some work. Program files include word processors and painting programs, for example. To run a program from the Desktop, you can point at it and click once (which highlights the icon), then point at File on the menu bar to drop down the File menu, and click on Open (which starts the program running). You can also just double-click on a program icon—click twice in rapid succession—to run the program.

(If you've selected Show as Text from the View menu, the program files will look like all the other files—a filename of up to eight letters, with a three-character extension. You can tell a program file because it will always have the extension PRG, TOS, TTP or APP. But you can run a program in the same way as with icons: either click and Open, or double-click.)

Another file icon looks like a stack of papers with one corner folded over. This tells you the file is data that a program can read, add to and change. A data file might be an itinerary for a rafting trip, a musical score page or a NEOchrome picture.

Data files are created and changed by programs, but they're not programs themselves. You can't run a data file with the File menu's Open option. It you try, you'll get a message that says you can only look at the file on screen or print it to your printer. Depending on the kind of data file it is, it may or may not make sense if you look at it on screen.

A third icon that resembles a familiar manila folder can show up in your directory window. This is the folder icon. Folders are among those wonder-

ful kinds of computer things that seem esoteric and complicated until you start to use them. Then you can't believe you ever got along without them. (If your directory information is showing as text, the folder icon will have a small diamond symbol to the left of its name.)

USING FOLDERS

Real stacks of paper can be put inside real manila folders. On the ST, data and program files can be put inside disk folders. A folder is a sectioned-off area on disk where you can store files (and other folders) that belong together.

Create a folder by dropping down the File menu and pointing and clicking on the New Folder option. In the dialog box that appears, type in a name for the

folder using eight or fewer characters. (You can also add a three-character extension, though it's not necessary.) Then click on OK. The new folder filename will show up in your active directory window. (Folders always appear first in the directory, before any files.)

Back in the directory window, drag a data file on top of the folder. When the folder is highlighted, release the mouse button. The data file will be copied into the folder.

Copy other files into the folder that are related to the first file. For instance, put a graphics program and all files you created with it into one folder. Your files are now grouped in one place where you can work with them easily—

without having to wade through lists of unrelated filenames.

Open the folder by double-clicking on it in the directory window. The folder opens to its own directory window, showing only the files you have in it. Use the files from the folder window just like you would use them from the main directory window. You can even create folders within folders—up to eight levels deep!

Close the folder by clicking on the close box in the upper left corner of the window. The main directory will reappear. Once your new copies of the files are safely stashed in a folder, you can erase the original versions from the main directory by dragging them to the trash can.

A curious thing about folders is that they don't appear to take up any room on a disk. (If you check the information line in a directory that contains nothing but folders, you'll find it says "0 bytes used.")

That's because folders aren't files, but only doorways to files. Each file has a certain length, and the length of all files in a directory are added up on the information line as "bytes used." But a folder isn't a file, so it doesn't have a length. (However, a folder does take up a small amount of space on your disk.)

FILE CLERK

Like any good filing system, the Desktop makes it easy for you to make copies of your work, as well as do an occasional cleanup by throwing away clutter.

Copies are made in four different ways, all of which use dragging. Before you copy, make sure the disk you're copying to is formatted and is not write-protected. (The sliding tab should be covering the write-protect notch so you can't see through it.) If the disk already contains other information, check it with the File menu's Show Info option. That will tell you if the disk has enough bytes available to accept the new items.

You can copy an entire disk to another disk by dragging one disk icon on top of another. All information on the source disk (the icon you dragged) will be copied to the target disk (the icon dragged to). If the target disk already contained other files, they will be erased during this kind of copying.

To copy an item from a directory window to a disk, drag the item from the window to the disk icon. In this way you can copy a single item to another disk without disturbing the items already there.

Copy an entire disk to the directory window of another disk by dragging the disk icon to the window. All the files on the source disk will be copied and listed in the directory window, along with the files already on the target disk.

Copy from one directory window to another by dragging an item from window to window.

continued on page 51

DISK INSTRUCTIONS

To fit the files onto your START disk, we compressed them using the ARChive utilities set. This is CompuServe's preferred compressor/librarian, and lets you compress many different files together into a single file, reducing the size by 40 percent or more. We have provided the program ARCX.TTP, which will let you expand each file back into its original parts

GETTING STARTED

Your START disk is not copy-protected, and you should make a backup of it immediately.

- Format a disk for backup.

1. Put a fresh disk in Drive A. The contents of this disk will be *erased*, so be sure there is nothing on it you want.
2. Click on the Drive A icon to highlight it.
3 Select Format from the File option on the menu bar.
4 Click on Single-Sided, if it is not already highlighted, then click on the Format button.
5. When the format is complete, an alert box will tell you how much space is available on the disk. Click on OK, then click on the Exit button to return to the desktop.

- Next, copy your START disk onto your backup disk.

1. If you have more than one drive, put the newly formatted disk into Drive B.
2. Put your START disk in Drive A.
3. Point the mouse cursor at the Drive A icon. Click and drag the icon to the Drive B icon until the Drive B icon is highlighted, then let go.
4. A message will ask if you are sure you want to copy the disk. Click on OK. At the next dialog box, click on Copy. *(Note to single-drive system users: You will have to switch disks several times so that the computer can complete the copy operation; simply follow the instructions on the screen. Disk A is your START disk. Disk B is your new backup disk.)*

- Now place your original START disk in a safe place. Put your new working disk in Drive A and double-click on the Drive A icon to see its contents.
- Copy the ARCed file you wish to run and ARCX.TTP onto another freshly formatted disk.

1. Find the icon of the file you want to copy and point to it with the mouse cursor.
2. Click and drag the icon to the Drive B icon so that it is highlighted, then let go.
3. When the computer asks if you're sure you want to copy the file, click on OK.

(Note to single-drive system users: You will have to swap disks several times when copying files, as you did when copying entire disks. Just remember that your working copy of the START disk is Disk A, and that Disk B is the new disk you want to put the program on.)

- Now, unARC the file.

1. Insert the new program disk into Drive A and press the Escape key to see the directory.
2. Double-click on ARCX.TTP.
3. At the prompt, type in the name of the ARC file you want to use, then press Return. For example, if you wanted to unARC the budget templates, you would type BUDGET.ARC. The disk drives will turn, and the program will display the names of the new files as it unARCs them.

If ARCX.TTP cannot find the file, it may be because you have misspelled the name of the ARC file. Remember, you must type the filename exactly as it appears in the directory

That's it! Now you are ready to run the program or load in the template, following the instructions in the program's accompanying article.

START Preparing Your Financial Future

In this issue we present an overview of personal finance programs currently on the market for the ST, but you can get started using your computer for constructive financial planning *now*– just slip your START disk into your disk drive. Discover creative ways to make the most of your money with:

- Two spreadsheet templates to let you customize a household budget (see "The Buck Starts Here");
- A program to project how quickly your retirement savings will add up (see "Figure Your Financial Future");
- A mortgage calculator to help you figure out how soon you'll be able to move into your dream home (see "Figure Your Financial Future");
- Tax templates to make Uncle Sam's bite as painless as possible (see "Taxes the Easy Way").

In addition, play the exciting strategy game Battle for the Throne or get a sampling of artificial intelligence with START's own Prolog interpreter (see "A Taste of Prolog").

If you bought this magazine without disk, you're missing out on one of the best deals on ST software available today. You can get the disk by sending in the order form enclosed in the magazine, or by calling our toll free number 1-800-234-7001. If you prefer to order by mail, send in $10.95 (plus $2.00 postage and handling) to DISK DESK, 544 Second Street, San Francisco, CA 94107. (When ordering, always make sure to specify which issue's disk you want.) ■

All programs on your START disk are for your own private use, and are not public domain.

Whenever you're copying an item to a directory window, you can copy to a folder in the window by dragging the item to the folder filename. When the

filename reverses shading, release the mouse button. The item will be copied into the folder.

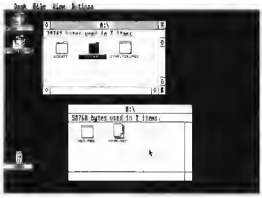
Here's a copying shortcut: When copying several items from a directory window, you can lasso them with the rubber-band box and drag them all together to their new location. To lasso items, position the mouse pointer to the left of the first item. Hold down the left mouse button and drag the pointer down and to the right, across all items. When you release the mouse button, all items will be selected. You can then drag them as a group to another window or disk.

Sometimes you'll discover that the file you're copying has the same name as a file already in a directory window. Your ST will warn you about this by giving you a message that says "NAME CONFLICT DURING COPY." When you get this message, you can either choose a different name for the new copy, or just click on Cancel to stop copying that particular file.

ERASING FILES

Data files seem to have a way of multiplying at night when the power is turned off. At any rate, that would explain why your disks seem to fill up at an unbelievable rate.

When a disk gets too full, scan through its files to see which ones you can erase. Drag the obsolete files to the trash can, either singly or in groups lassoed with the rubber-band box. (If your disks are usually write-protected, take



the write-protection off before erasing by moving the tab so you can't see through the notch.)

Dragging files to the trash can gets rid of them for good, so be sure you throw away only those files you never want to see again.

The Desktop's filing system was designed to make your computing life easier. Taking advantage of it is another smart way to use your ST. ■

If you'd like more articles like this, circle 275 on the Reader Service Card.

Carol Ann Brimeyer is Senior Publications Editor for Atari Corp.

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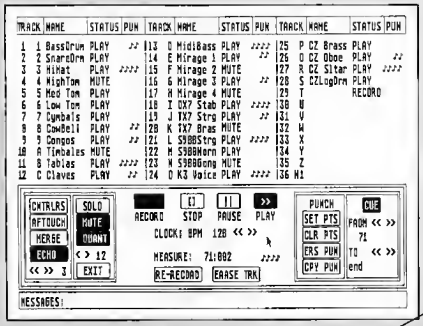
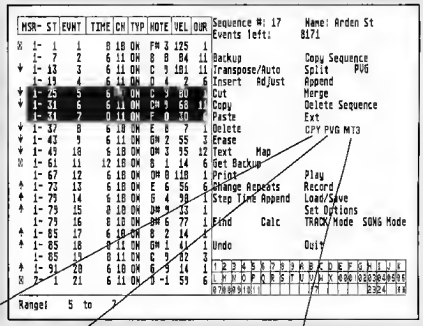
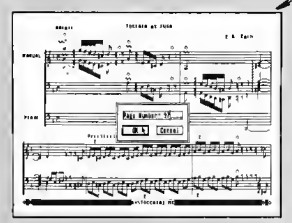


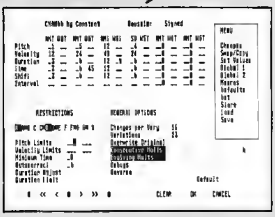
TRACK-MODE RECORD/PLAY



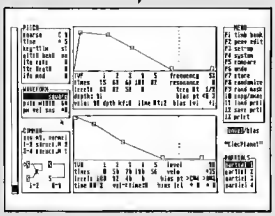
OPEN-MODE EDIT



COPYIST V1.4



PVG



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The PVG was written to allow the user to computer to generate variations from any previously recorded musical part. It can produce changes or permutations in pitch, dynamics, controller values, rhythm and expression, according to instructions that can be entered in detail by the user. For example, the beginning of a part can be given small pitch changes, while the end of the part is given large velocity changes. The program can produce a single variation on a part or a series of variations that evolve over time. The variations produced can contain some randomness or be fully determined.

Integrated with the PVG is the Master Editor, an editing and orchestrating tool of unprecedented power and flexibility. It allows the selection of notes for editing operations by a wide range of criteria, including pitch, velocity, interval from next or last note and position in pattern.

ONLY FROM THE DR!

CIRCLE 010 ON READER SERVICE CARD

A Portrait of Rock Musician Dave Mason

by Mard Naman

On the cover of a pre-MIDI album called *Some Assembly Required*, rock musician Dave Mason is staring into the camera with a look of confusion and despair on his face. Directly behind him is a huge tape deck with recording tape running amok all over the place.

On the back cover of Mason's brand new album, *Two Hearts*, he's standing with a look of contentment on his face. And he has good reason to be not only contented, but excited. Because between these albums, Mason has gone MIDI. His new album was recorded almost entirely using the Atari ST and the latest MIDI technology.

Courtesy of MCA Records

MASON MEETS MIDI

Mason has been in the music business a long time. In the sixties he made two best-selling albums with the English band Traffic. In the seventies he carved a niche for himself as a successful solo artist with the top pop album *Alone Together*. His new album is his first collection of new songs in almost eight years.

Like a lot of talented musicians, Dave Mason is very creative, but not necessarily a technological genius. So when he decided to go for computerized music-making and realized that some assembly would indeed be required, he got MIDI wizard Jimmy Hotz to set everything up for him. Jimmy Hotz is a record producer who has also become the "Johnny Appleseed of computer music." Many top musicians have gotten into MIDI because Hotz has made it accessible to them in a way it never was before. In other words, he makes MIDI totally user-friendly without sacrificing one drop of quality.

When Mason first heard MIDI, it was an Atari system that Hotz had set up for Leon Russell. Remembers Hotz, "The timing was the thing that impressed Dave the most. A lot of the other units sound pretty good, but the timing isn't 100% there. The timing is just so right with the Atari using the Hybrid Arts sequencing package."

For Dave Mason, as he did for B.B King and others, Hotz got the Atari 1040 ST and the Hybrid Arts SMPTE Track sequencer package. He also got GenPatch for generic patching and a variety of synthesizers, sound samplers, drum machines and editors. "Don't ask me how this stuff is wired up," laughs Mason from his home in Chicago. "I haven't got a clue. But you don't have to know how or why it works, you just have to know how to work it."

For the last two years, that is exactly what Mason has learned how to do: work with MIDI. "In the beginning, it was difficult," he admits. "It drove me crazy. But it was well worth the time and effort. I mean, now I *love* it. It's wonderful."

Mason loves his MIDI system because "for a songwriter, it's perfect. It's invaluable. You've got everything here at your disposal. Every musical instrument known to man, and some that aren't! I can work out most of the songs I'm going to do in the studio right here at home. It's great to be able to write at home and get your ideas down instantly."

Mason has this advice for musicians who are just getting into MIDI: "I'd recommend to just jump right in and buy the Atari ST and the Hybrid Arts sequencer or something similar. You might as well start out with something that really does the job and learn how to use that. Otherwise, if you get something smaller, you'll just have to re-learn everything." ▶

YESTERDAY'S STATE OF THE ART

Mason is not a total stranger to new electrical devices. "When I played with Traffic years ago, we used the Mellotron," he says. Mason says the Mellotron was like a primitive sound sampler, though it was "actual tape on loops inside a thing that looked like a Hammond organ. The sounds were nowhere near what we get today with MIDI, but that was state-of-the-art then."

For the new album, Mason wrote all the songs using MIDI and the album was recorded using the ST. The drums, bass, keyboards—all the instruments except for a few of Mason's guitar solos—were programmed with MIDI. Even some of the vocals were MIDI-made. "We'd sample choruses, then fly them back into the track," Mason noted. "You can get a great-sounding chorus and sample it down to 2 tracks without losing a thing. And you've got a great chorus every time it comes in. It's wonderful."

Mason thinks the drums sound great, too. "If you listen to my album, you wouldn't know the drums were programmed at all." Still, he thinks he has much to learn before he can get the exact live sound he wants. "I've just got to work with it some more. I'm still learning."

But Mason says other artists have already achieved a totally live feel using MIDI. "That Peter Gabriel album, *So*, is hot. I couldn't tell at all it wasn't live. It sounded to me like some drummer really kicking ass, but it's all programmed drums."

At the same time, Mason says that unless an artist really knows what to do, MIDI music can suffer from losing that live feel. "It's a little hard to program feeling into MIDI music. You've got to be sophisticated to really use it in depth. I mean, they've got this program called Humanization (built into SMPTE Track), where you can offset things, build little tempo increases, little imperfections. But I'm still learning. I haven't gotten to all the subtleties yet."

TOUCH TONE TANGO

One thing Mason hopes to get in the near future is a modem. "That old joke about phoning in your parts has come true," Mason says. "Pretty soon, we'll just be sending information down a phone line. Then the person at the other end just hooks a synthesizer up to it and plays." Since Mason lives in Chicago and his producer Jimmy Hotz is in Los Angeles, and they both have the same Atari and software, a modem makes a lot of sense. "Soon I'll just send my parts over the phone line and Jimmy can play the parts at his home in Thousand Oaks," Mason stated. "The possibility exists right now. All I need is a modem, then I'm online!"

"That Peter Gabriel album So *is hot. But it wasn't live—it's all programmed drums."*

Hotz agrees that a modem will be a great way for him to work with musicians. "They have 12-track systems at home to get rough ideas down and have them as reference points. Then they'll send the sequence over the phone to me and I'll work on it and then send it back to them with something added saying, for example, 'Use this patch number with this Genpatch file.'"

MAKING MIDI HIS VERY OWN

In a creative sense, Mason took to MIDI right away. "The first thing I got him was a serious drum machine, the SPI2," says Hotz. "I was just setting the system up and put a drum pattern on it just to get the equipment working, basically. Dave liked the pattern so much he wrote a song with it instantly," says Hotz. That song became the title song on *Two Hearts*. As co-producers, they continued to work together throughout the album. "We would agree on different sounds together," says Hotz. "I programmed almost all the drums on the album before we did anything else. Then we'd have the various keyboard and bass parts put on. We'd get the heart of it first. Then we had Mike Lawler, a red-hot studio musician from Nashville, put his own touches on. Sometimes these would be embellishments, sometimes totally new things.

"But everything you hear on the album, except for a few of Dave's guitar solos and a percussionist on one song, is all sequenced stuff. It's all MIDI sampled," Hotz said.

Now that the album is out, Mason will be performing in concerts across the country. And Jimmy Hotz will probably be tapped to set up a MIDI system for the concert performances. And he doesn't think it will be a simple task. "When you do a lot of sequencing on tour, you have to have back-up units and you have to have a staff of people," Mason stated. "I'll have a couple of people just handling the sequencing and changing sounds on the side of the stage. I'll probably have at least a half-dozen Atari STs. You have to have a GenPatch on line all the time. You have to have a couple of sequencers on line all the time. You have to have massive MIDI switchers. You have to always be

uploading one computer with new sequencers while you're playing the song on another one. Then you'd have to have serious documentation. You have to have a computer doing the log and basic switching functions for you. It can get pretty hairy!"

For the tour, Mason plans to take a live drummer, but Hotz says he'd have "some of the heartbeat stuff, like certain kicks and snares, programmed into the system and then have the drummer driving MIDI as well. I'll always have all the drums driving other samplers, but I'm very careful to make sure the system I set up for a drummer absolutely implements a transition he's comfortable with. It's got to respond right: it's got to sound great. I've got techniques to make a drummer totally interface with MIDI and feel not only does he not lose control, but he gains more than he ever had."

Dave Masons' new album was recorded almost entirely using the Atari ST and MIDI.

In other words, just as he did for Dave Mason and many other top musicians, Hotz makes the transition from non-MIDI to MIDI as smooth, painless and exciting as possible. Dave Mason has made that transition. "If you're a professional musician or songwriter, you've got to have MIDI," Mason concludes. "Otherwise, you're missing out on a great tool." ■

A profile of Jimmy Hotz appeared in the Graphics and Music issue of START (February, 1988).

Mard Naman is a freelance magazine and television writer.

PRODUCTS MENTIONED

- **GenPatch ST**, $149; **SMPTE Track**, $575. Hybrid Arts, Inc., 11920 West Olympic Blvd., Los Angeles, CA 90064, (213) 826-3777.

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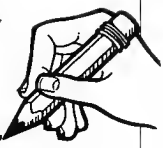

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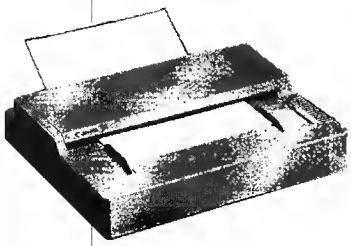

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347mm(W) X 295mm(D) X 89mm(H)
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Weight
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Master Tracks Pro

MIDI power from Passport

BY RAY BACHAND

As we musicians learn to use the computer to help create and organize musical ideas, we want to continue to be able to think in terms of music. We basically want to speak the language we have spent years learning and mastering. As music software develops, it's becoming more powerful and more intuitive. Although crunching numbers is a very accurate way of keeping track of information, there is something about the process that always seems to get in the way of the creative flow.

The latest generation of music software is addressing this problem by incorporating powerful graphic representations of the systems musicians have been dealing with for years. Passport Design has considered these problems and has come up with a solution—Master Tracks Pro, its new sequencer. It's an intelligent, useful tool for the practicing musician.

MAKING TRACKS

Master Tracks Pro takes full advantage of the ST's interface features, such as GEM menus and the mouse. The screens are clean, well-designed windows that can be organized in groups and saved to your preferences. The boot-up screen consists of the Transport, Conductor and Sequencer windows. These are primarily used to record, control and play back music in conjunction with the rest, which are data manipulation or editing windows. The Song Editor, Step Editor and seven MIDI Data Windows are graphic representations of complex musical concepts.

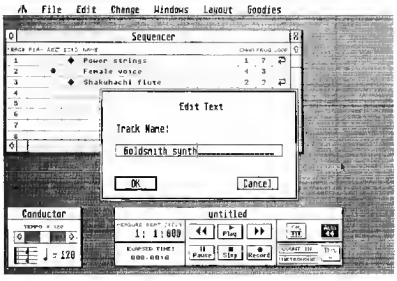
The Song Editor allows a broad overview of the sequence, while the Step Editor displays much finer note detail. The MIDI Data Windows are quite unique and make this program the most comprehensive non-note editing package I have seen to date. The seven windows graphically display and edit pitch bend, channel pressure, key pressure, modulation, MIDI controllers, program change commands and a conductor track (tempo map). ▶

Master Tracks Pro...

All parameters are plotted on an x/y graph, and you can enter or edit any parameter using the same techniques you use to manipulate note data. For example, a pitch bend in a melody line in track one, measure three can be "painted in" with the mouse and then the pitch bend information simply copied and pasted to a harmony line in track two.

THE TRANSPORT WINDOW

The transport window conforms to the standard tape recorder analogy that most other sequencers use. Six icons in-



The Sequencer Window.

cluding play, record, pause, stop, fast forward and rewind perform the same functions as any analog recorder. These functions can be controlled with the mouse, from the ST's keyboard or from the music keyboard. The keyboard button, when toggled on, gives complete transport control to the music keyboard, allowing the instrument to be separate from the computer. This is a definite plus in live performance situations or in a crowded studio.

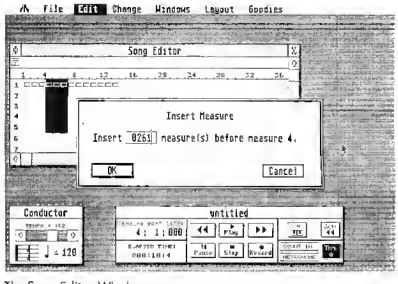
Other buttons in the transport window include the auto-rewind button, the metronome and count-in buttons, and the MIDI Through buttons. When you switch on the auto-rewind button the transport will automatically rewind to either the beginning of the sequence or to any predetermined spot. The metronome acts as a click track and the count-in gives a "four for nothin'" either at the beginning or wherever the sequence is started. The MIDI Through button, when switched on, echoes incoming MIDI data to the MIDI Out port. This allows master controllers to drive outboard synth modules, drum machines, signal processors, etc. Again, this demonstrates the "single point control" design philosophy of Master Tracks Pro.

Knowing where you are in a sequence is one of the most important user interface functions of any sequencer. Passport has included two counters. One, as in all other sequencers, displays the current position in measures, subdivided by beats and further by clock ticks (240 ticks per quarter note). The second is simple, but useful—a real time clock. It displays music in elapsed time. This, combined with the "Fit Time" feature, is ideal for any application that needs a music cue (either whole or in part) to fit a predetermined time segment. Jingle producers, video post houses and radio production rooms take note—this is for you. Music of any length can, with a couple of keystrokes, be condensed or lengthened to fit any time slot.

THE SEQUENCER WINDOW

The sequencer window is where basic track information is displayed. All 64 tracks can be scrolled along the y-axis while the x-axis displays 8 columns of information, including track numbers, which tracks are playing, the track presently in record mode, track name, the MIDI playback channel, the initial patch change command and loop status. Any group of tracks can be played or muted and any number of tracks can be soloed. You can name each track individually, and notes regarding synths, sounds or any other track information can be typed and saved along with sequencer information. I don't understand, however, why you can't transfer this information to other windows. Displaying the track names in all windows would save having to go back to the sequencer window just to remember which track you are working on.

From the sequencer window any track can be independently looped and initial patch change commands can be sent to synthesizers. These are two very useful features for organizing available memory and initializing complex synthesizer setups; however, this brings up what I feel is one of the major oversights of the program. When you start the sequencer after the initial loop has ended or after a patch



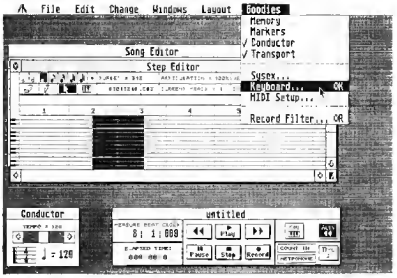
The Song Editor Window.

change, the sequencer doesn't look back and read either the loop command or the previous patch change command. The tracks that are looped simply don't play and the synths don't change patches until they see another patch change command. This can be a real pain when editing or listening in the middle of a piece. I hope a chase function or some other

means of looking back to the last command will be added in later revisions. Until then the looped measures must be copied and all patch setups must be done manually.

THE SONG EDITOR WINDOW

The song editor window displays a broad overview of sequence information. It's a table of tracks listed vertically by



The Step Editor Window

track numbers and horizontally subdivided by measures. Each measure is depicted as a separate box: white if empty, black if it contains MIDI information. Across the top is a measure ruler and song markers to identify location. Measure numbering is user-definable to any convenient interval and markers can be set to easily identify and locate points in a sequence. Much like tab markers in a word processor, markers are dragged across the ruler and dropped into location. Once the markers are in place you can locate them quickly and easily by using the tab key. These points can then be named (helpful in keeping track of sections of music, such as verse 1, verse 2, chorus, etc.), and unlike track names the marker names transfer across windows.

THE STEP EDITOR

The step editor window depicts one track only of note information. The y-axis is pitch information graphically represented by a sideways piano keyboard. Master Tracks Pro does not distinguish between sharps and flats. Those of you who are "just intonation" fans will be dismayed to hear that all accidentals are represented as sharps. The x-axis displays time as measures. Notes are graphically represented on the grid as bars. As notes go higher in pitch the bars get higher and as they get longer in duration the bars get longer.

Now, traditional music notation has been around for a long time, and though not perfect, it works fairly well. But as I use this "piano roll" system, I'm becoming more and more convinced that it actually works *better*. It's certainly a more realistic representation of a note's value. One drawback, however, is that repeated notes at the same pitch are shown as one straight line with no breaks. For example, four sixteenth notes on middle C will show as one line one quarter note long. There should be some way to determine new rhythm attacks.

The step editor window is where step entry recording is performed. Above the measure ruler is a menu displaying all the commands needed to record music by individual event. After a little practice I found this system to be a very precise, intelligent and reasonably fast method of recording. Note values, including tuplets, articulation, velocities and the location of notes can all be set from this menu. Once all the parameters are chosen the note can either be dragged into place with the mouse or entered directly from the music keyboard.

The pitch and time indicators are two boxes in the middle of this menu that make locating a precise point on the grid a breeze. As the cursor moves through the grid these values change, showing the exact location at all times. Horizontal movements change time values and vertical movements change pitch. This is a great concept, but I have a complaint—the boxes are small and hard to see, especially when you enter notes from a keyboard a few feet from the monitor.

The function of all computer sequencers that sets them apart from their analog cousins, multitrack tape recorders, is what they can do with musical material after a piece is recorded. Editing is where MasterTracks Pro shines. In the editing windows, any group of information can be marked off and then cut, copied, pasted or processed word-processor style, and you have several choices of how to mark those areas. Unfortunately, though, in the song editor window only concurrent tracks can be marked. It would be helpful, for example, to be able to mark tracks 1, 4 and 10 together.

After note or MIDI events are placed in the edit buffer (clipboard), the change menu can be used. This is the heart of Master Tracks Pro's powerful editing system. It's hard to believe that this much power can be packed into such an unobtrusive ten-item menu. Changes in channel assignment, note duration, controller and tempo mapping, velocity mixing and pitch transposition are handled from this menu. Specific data can be stripped from a track, rhythmic relationships can be quantized or, just the opposite, humanized—and with that small miracle, "Fit Time" music can be shoe-horned into a predetermined time frame.

The humanize box is interesting. The computer, by randomly changing start times, durations and velocities of each note will, in theory at least, emulate the inconsistency of a live player. Any or all parameters can be selected to be randomized and a maximum value set within which these values are changed. Although I didn't find this function very useful for its human emulation capabilities, setting the values high ▶

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and clicking on velocities made for some nice random rhythmic effects.

CONCLUSIONS

With its powerful editing features, a smart interface and a system-exclusive librarian, Passport has given us a valuable tool to support the creative impulses of musicians at all levels. The program is as easy to use for a beginner as it is for a seasoned pro. With a few exceptions, Master Tracks Pro is also relatively bug-free, and since it's so well designed, it's quite easy to learn. Good job, Passport! ■

If you'd like to see more articles like this, circle 155 on the Reader Service Card.

Ray Bachand is a Bay Area musician. He's active in performing and recording, and is fascinated by the possibilities of computer music.

PRODUCTS MENTIONED

- Master Tracks Pro, $349.95. Passport Designs, Inc., 625 Miramontes St., Half Moon Bay, CA 94019, (415) 726-0280
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THE HOT-ROD ST

Souping up your 520

by Charles Cherry

The classic 520 ST was once a red-hot machine that could leave anything else in its dust. But now there are bigger computers—faster computers—computers that can blow the old 520 right off the road. Has the 520 ST missed the turn on Dead Man's Curve? Longtime ST hacker Charles Cherry says no—and he'll show you how to turn your machine into the hottest thing on silicon all over again.

The 520 ST.

Three years ago, in the spring of 1985, it was a dream machine. There was fabulous power here: a 68000 processor running at 8 megahertz with half a megabyte of memory. By the end of the summer, a 520 ST cost less than $1,000, and for a lot of engineers and scientists, it was a dream come true. That much number-crunching power had never before been available for under $10,000.

It's easy to forget what a radical machine the 520 ST was. Remember, at that time a Macintosh had only 128K bytes of RAM. The Amiga had only 256K, and most IBM PC users got by with 256K, too. All these machines were slower than an ST—and at least twice as expensive.

Today, the 520 ST is no longer the hottest thing in town. Macs got big, Amigas got cheap and IBM clones spread everywhere. The blitter-equipped Mega is bigger *and* faster than its older cousin. Three years later, the most powerful personal computer you could buy in 1985 seems almost like a toy.

Should you give your 520 to the kids and upgrade to a Mega—or mortgage your house and get a Mac II? Maybe not. The 520 ST has proven itself to be a solid and reliable computer. Thousands of owners have had years of valuable service from their 520s, and they're not ready to trade them in yet. Fortunately, there are a number of ways to soup up that old 520 into a state-of-the-art powerhouse.

4-BARREL CARBS & DUAL EXHAUSTS

When the 1040 ST was announced, it seemed more like a marketing ploy than a serious improvement. What would you ever do with a full meg of memory? Now, of course, the 520 ST's "tiny" half meg is its biggest drawback. (There was a time when Apple thought that no one could ever use up the 128K in the Macintosh, and IBM thought the 640K limit of MS-DOS was ridiculously large; it proved to be ridiculously small.) As the saying goes, you can never be too rich or too thin—or have too much memory.

Although Atari didn't plan for memory expansion in the 520 ST, it's possible. Many owners have boosted their 520s 1 meg—and you don't need to stop there. You can use up to 4 megabytes with TOS, and I have personally seen a 520 ST expanded to 8 megs of RAM.

Doing It Yourself

Many 520 owners have gone the do-it-yourself route to memory expansion. Instructions are available on computer bulletin-board systems and from user groups, but the procedure requires detailed and painstaking work—definitely not recommended for novices. However, if you're competent

with a soldering iron, have a free weekend and are willing to risk your computer, the results can be excellent. (This type of upgrade recently has been made easier by the introduction of piggyback sockets, specially designed for stacking chips on top of each other; they're available from most large electronic supply houses.)

If you're wary of tackling a project this complex alone, you'll often find people at your user group who can help you. But be careful – such do-it-yourselfers may prove to be great, or may hand you back a pile of smoke and ashes. Check out some other 520s they've upgraded – never let yours be the first. And don't be afraid to say no; if you're not sure they can do the job, don't let them. After all, it's your computer, and you will bear the loss, not them.

Fortunately, almost all 520 owners can turn to an expert to do the dangerous stuff for them. Many Atari dealers and service centers offer memory upgrades. Most use the same piggyback technique as the do-it-yourselfers. It costs a little more, but the work is expert and it's guaranteed.

Memory Boards

There's one more alternative, probably the best of all. Several commercial memory expansion boards are available for the 520. They're available in various sizes; with some, you can continue to add memory up to 4 megabytes. As I said, you'll always need more memory, so you should consider the larger, expandable boards.

Aerco makes the popular **easieST RAM**; they also manufacture the **Solderless RAMboard** that's sold by E. Arthur Brown Company. The **EZRAM 520** from Ternfic Peripherals has just been improved – the new **EZRAM II** will work with any 520 or 1040 ST. I also recommend the **RAM Upgrade Board** from Diverse Data Products.

All of these boards are relatively simple to install, requiring few or no solder connections. You can probably install one yourself; there's little chance of destroying your 520 ST. However, even opening the 520 and removing and replacing the RF shield is trickier than it looks. If you feel that discretion is the better part of valor, most dealers will install the board for you.

Another route to memory expansion is the **Polydisk**. This is not a true "in-line" memory expansion; it's a 512K cartridge that can be used as RAMdisk and print spooler. If you currently use software for either of these functions, Polydisk takes over and frees up your main memory. Personally, I like RAMdisks; I only wish Polydisk were twice as big.

You can never be too rich or too thin—or hove too much memory.

FUEL INJECTION

One of the earliest things you discover as an ST owner is that your computer is happier with two disk drives. The first time you try to copy a file with only one drive, you experience disk-swap mania. There must be a better way, you think.

Disk Drives

The most obvious choice is a regular 3½-inch disk drive. You can get either a single-sided drive such as the **Atari SF354** or double-sided drives such as the **Atari SF314** or the **C-Systems Megadrive**. I recommend double-sided, especially if your first drive is single-sided. A double-sided drive works fine with single-sided disks, but even today, some programs and demos won't fit on a single-sided disk – and there will be more of them in the future.

A double-sided drive quickly pays for itself, too. Consider this: The Atari SF314 costs only about $100 more than a single-sided drive – that's about five boxes of disks. The C-Systems Megadrive is only $30 more – less than two boxes of disks. You'll buy fewer disks, save money and have less clutter on your desk.

RAM Disks

Another (and cheaper) choice is a RAMdisk program. They're available almost everywhere – from computer bulletin boards, user groups, and public-domain libraries. With a couple of megs of memory, you can afford to set aside a large RAMdisk. Copying a file is less graceful than with two real drives, but it's much easier than with a single drive – just copy to the RAMdisk, swap disks, and copy back. Most other functions are faster and easier than with a two-drive system – and if a really huge program needs all your memory, you can reboot without the RAMdisk and get by with a single drive.

Hard Disks

If you hate reloading your RAMdisk every time you turn on the computer or all your memory is reserved for your laser printer, it's time to think about a hard disk. Hard disks aren't just for power users anymore. A hard disk only costs about twice as much as a regular ST disk drive – and it will change the way you use your ST. Have you ever wanted the computer to keep track of your disks for you? Just copy them onto your hard disk and it will. No more searching for the disk with that obscure graphics demo you wanted to show your visiting relatives – just boot the computer, open the folder and there it is. Hard disks are much faster than regular drives and make computing a real pleasure. A system with one regular ▶

drive and a hard disk makes a lot of sense.

Several ST hard disks are available. The **Atari SH204** is Atari's standard 20-megabyte hard disk. The **Astra Systems HD+** gives you a hard disk with a double-sided 3½-inch drive built-in—perfect for a 520 with no built-in disk drive. The **SupraDrive** comes in three sizes (20, 30, and 60 megabytes), and the **ICD ST Hard Drive Systems** come in 20, 30, 40 and 60 megabyte configurations.

When you try to copy a file with one drive, it's disk-swap mania time.

One of the most interesting ways to add an ST hard disk is a kit from Berkeley Microsystems. It's called the **BMS 100K Kit**, and it gives you the electronic interface between your ST and the hard drive; you supply an IBM-style hard drive, power supply and case. This gives you a wide choice of drives, and it can save you money—especially if you need a 30- or 40-meg (or larger) drive.

5¼-inch Drives

If you own an IBM PC or clone as well as a 520 ST, you may be interested in attaching a 5¼-inch drive to your ST. The ST can read and write MS-DOS disks; all you need to add is the hardware. Several are available, including the **IB Drive** from IB Computers and the **Microbyte A** and **B** drives from Paradox. You can also add the necessary cables and power supply to any IBM-style drive—that's made easier by the **ST/PC Drive Cable** from E. Arthur Brown Company.

There's another way of swapping disks with an IBM-compatible computer that's cheaper and may be smarter, too. Instead of adding a 5¼-inch drive to your ST, add a 3½-inch drive to your IBM. Not only will you be able to exchange data between the IBM and ST, but your IBM will also be able to exchange data with IBM-compatible laptops and the new IBM PS/2 computers.

THE CLASSIC ST

Obsolete? Not a chance—the 520 ST is still a classic. Next issue, we'll look at some of the ways you can take the classic 520 well beyond its original capabilities! ■

If you'd like more articles like this, circle 210 on the Reader Service Card.

Charles Cherry is a regular contributor to Antic *magazine and a newsletter editor for the ABACUS users group in San Francisco.*

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CIRCLE 212 ON READER SERVICE CARD

EZRAM II, $139.95. Terrific Peripherals, 17 St. Mary's Court, Brookline, MA 02416, (617) 232-2317.

CIRCLE 213 ON READER SERVICE CARD

RAM Upgrade Board, $149.95. Diverse Data Products, 1805 NE 164th St., North Miami Beach, FL 33162, (305) 940-0458.

CIRCLE 214 ON READER SERVICE CARD

Polydisk, $199.95. Polyware_ST, 5715 Horning Rd., Kent, OH 44240, (216) 673-5591.

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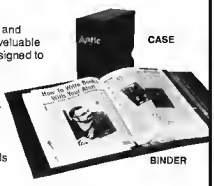

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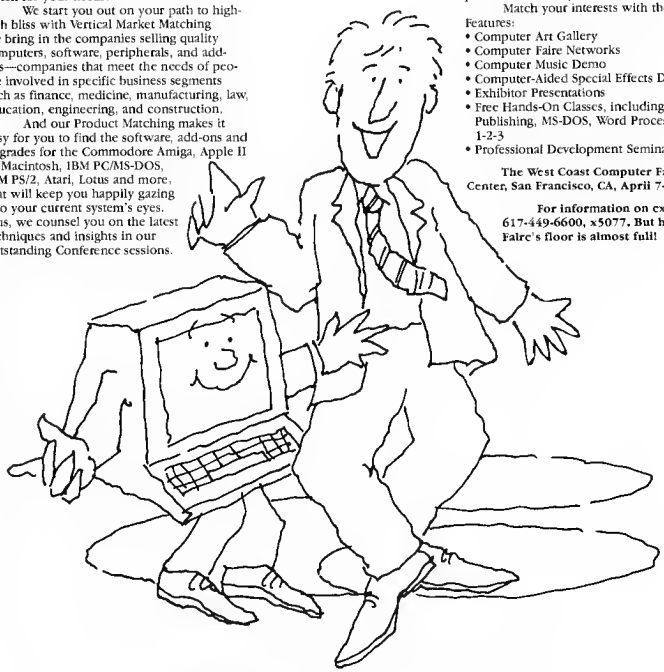

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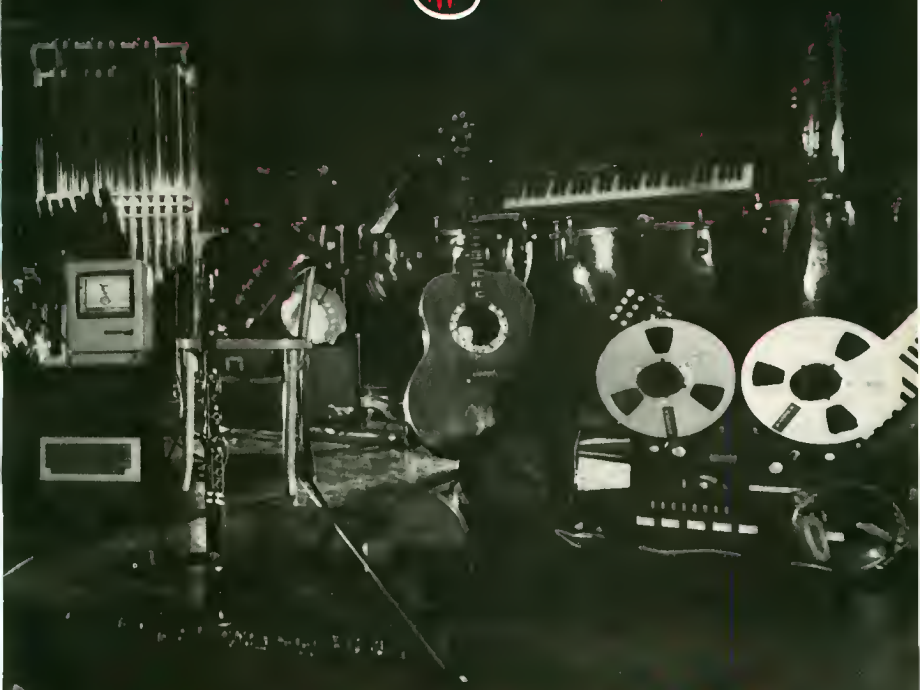

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DESK ACCESSORIES

Hidden power at your fingertips

By Arlan R. Levitan

Anyone who regularly uses a desk at home or the office tends to keep often-needed items handy on top of the desk or hidden in a nearby drawer. Memo pads, calculators, staplers, letter openers, appointment calendars and reference books are found on millions of desks the world over.

The designers of the Atari ST's GEM Desktop provided facilities for similar computerized tools called *desk accessories*. Desk accessories (DAs) are memory-resident programs that may be called up while you are working within a program, used briefly and then tucked away until needed again.

Many ST owners are not aware that they regularly use Desk Accessories. The ST Control Panel, Install Printer and VT-52 terminal emulator selections found under GEM's Desktop menu are actually desk accessories.

When you start up your ST, your system checks the main folder of the boot drive for desk accessories. They are files that end with the extension ".ACC," which, when found, are automatically loaded and made a part of the Desktop menu selection.

You do pay a price for this convenience. Getting carried away with desk accessories is akin to filling up a desk's drawers and surface with so many "handy" accessories that there is no room left for work. Desk accessories typically must be loaded from diskette into your ST's memory, where they remain resident until you turn off your system. Since DAs "eat" memory and the ST can handle up to six DAs, it's easier than you might think to end up dedicating a significant chunk of your system's memory to DAs. Also, DA files must be resident on the boot disk, a fact which reduces the room left for application programs and files on the boot diskette.

The ST's desk accessory capabilities are part of GEM. DAs can only be accessed if GEM's Desktop menu is accessible. TOS-based programs such as ST Writer or Zoomracks that hide the menu bar while they are running do not allow access to DAs.

There's a wide variety of desk accessories available for the ST. What desk accessories are right for you? It's largely a matter of personal needs and style. DAs should be selected with care, balancing the memory and diskette space required to support them against their overall usefulness and how often they are needed. Here's a brief overview of four commercial DA offerings.

PARTNER ST

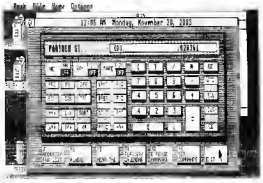
Partner ST by Timeworks combines multiple desk accessories into an integrated package of well-designed, easy-to-use-tools.

Installation of Partner ST is simple, consisting of copying a folder and several files to your ST's boot disk. When Partner is loaded for the first time you are presented with a setup screen that lets you customize Partner for your own hardware configuration. After first-time setup is complete, Partner will automatically load each time your system is booted from a diskette with Partner installed.

When Partner is selected from the Desktop menu you are presented with a computer-based calculator. Partner's calculator is extremely versatile, combining the functions of a scientific and financial calculator. It may also be converted into a hexadecimal calculator for programmers and can be set for a special form of data entry called RPN (Reverse Polish Notation) that is used by most Hewlett Packard calculators.

Mouse-sensitive buttons across the bottom of the calculator let you access other Partner functions. An Address/Phone List/Auto Dialer lets you keep track of names, addresses and phone numbers, and can make calls if your ST is equipped with an autodial modem. A Planner/Calendar keeps track of appointments and lets you track what you've been spending your time on. A memo pad is provided for writing yourself notes and using your ST as an electronic typewriter. Six reference files for the memo pad are included: Weights and Measures, Metric Equivalents, Holidays, Distances, Area Codes and Toll-Free Numbers. An alarm function lets you set audible alarms with corresponding on-screen messages. An expense manager lets you keep track of your monetary expenditures. A ▶

Thunder!



Partner ST

DeskCart!

Disk Manager gives you access to GEM disk commands from within other programs.

The aforementioned Partner functions are integrated into a single desk accessory file that occupies about 150K of disk space. A "mini" version of Partner ST is included that is about 50K smaller but omits the Planner/Calendar, Alarms and Expense Manager.

Partner ST also includes two other DAs: a sixty-thousand-word thesaurus and a "stress reliever" arcade game similar to Breakout. Although Partner's other functions can be effectively used on STs with a single-diskette drive, using the Thesaurus requires an additional disk or RAM drive.

If all of Partner's functions are loaded, almost 230K of memory is required. Fortunately, you can control exactly what tools you want loaded when Partner starts up.

The tools supplied within Partner ST are useful and extremely well-designed. The supplied ring-bound manual is excellent. It is professionally produced, easy to understand and supplied with a complete index. A "quick-start" section lets you start using Partner almost immediately. Timeworks maintains a separate phone number for Technical Support, and for 90 days after you purchase Partner ST, Timeworks will exchange Partner ST for any competing DA program for the difference between the price paid for Partner and the retail price of the other.

DESKCART!

QMI's Deskcart! provides an attractive assortment of desk accessories and a battery-backed-up Clock/Calendar in a convenient cartridge that plugs into the ST's cartridge slot.

Since most of Deskcart's DAs are loaded from the cartridge into the ST's memory, the product requires relatively little disk space (from 33 to 55K), making it very attractive for use with single-drive STs. Although Deskcart's full complement of fourteen functions require 132K of memory, they take up only two of the ST's maximum of six allowable DA "slots."

An integrated Calendar and Appointment Book allows you to arrange your schedule in advance. The Appointment function can also be used to set audible alarms that key off of DeskCart!'s hardware clock at designated dates and times.

DeskCart!'s Note Book may be used much like a memo pad for quickly jotting down notes while you are in the middle of another GEM program. A "Card File" function lets you store, sort and retrieve information in an index-card-like format.

An Address book lets you keep the addresses and phone numbers of associates available at the click of a mouse, and if your ST is equipped with an "intelligent" modem, it will dial the phone for you.

The contents of the Appointment, Address and Note Books may be printed and searched. DeskCart! uses standard ASCII files that can be loaded into any word processor capable of handling ASCII text. A "TypeWriter" function prints characters as they are typed on the keyboard, a handy feature for addressing envelopes. DeskCart! also has its own control panel which replaces TOS's disk-based control panel.

DeskCart's VT-52 Terminal function offers little more functionality than the one supplied by Atari with the ST, but does allow you to eliminate the latter from your boot disk with a clear conscience. DeskCart's calculator is a serviceable hexadecimal and scientific model that, as of Version 1.01, is contained in a separate disk-based DA file (31K) rather than in the cartridge.

While DeskCart!'s other DAs offer functions that are commonly available from stand-alone programs (RamDisk, Print Spooler, Screen Dump, Memory Tester, Keyboard Macros, Disk Utilities & Formatter), there's no question that having them all bundled together in an integrated whole is a real convenience.

QMI's manual is clearly written and well organized, but lacks an index. When new releases of DeskCart! are available, QMI will update present owners for $10. QMI also maintains a twenty-hour ST-based computer bulletin board to handle questions from users.

THUNDER!

Thunder! is an interactive spelling checker. It catches spelling errors as they occur, not after the fact. When you type the space that follows the last letter of a word, Thunder checks the word's spelling and beeps at you if it isn't found in its dic-

tionary. When an error is signaled you may correct it manually or ask Thunder! to suggest the correct spelling. If you ask Thunder! for help, a list of possible words is presented. When an alternative is selected, it automatically replaces the word in error.

With its 50,000-word dictionary loaded in memory, Thunder! requires about 150K of memory and disk space. Words not found in Thunder's vocabulary may be added to the program's "main" dictionary or a "supplementary" dictionary. Words added to the main dictionary require little additional memory but cannot be deleted once added. A supplementary dictionary can hold about two hundred additional words. Multiple supplementary dictionaries are supported although only one can be active at any moment. Thunder! also uses a special "Learn" dictionary that allows you to set up automatic correction of common mistakes and expansion of abbreviations.

The Atari ST's GEM Desktop provides facilities for computerized tools called desk accessories.

Interactive spelling checkers are not for everyone. Writers who like to write carefully and deliberately, correcting errors as they occur, will benefit the most from Thunder's interactive mode. Those who choose to crank out words in a smooth stream, waiting until the bulk of a document or section of text is complete before correcting spelling and format, tend to prefer spell checkers that work on an entire document at once.

If you're not crazy about the idea of Thunder! beeping at you as you type, a stand-alone version of the program is also provided. Stand-alone Thunder! offers very good checking speed, flexible replacement options and document statistics that many writers will find helpful. Stats on the number of characters, words, syllables and sentences in a document and two commonly used "readability" indexes help aspiring wordsmiths keep tabs on the quality and lucidity of their writing.

Thunder! is a smoothly operating, unique program that can be a useful writing tool. The manual makes effective use of illustrations and is easy to understand, although it lacks an index. Program installation is straightforward and adequately explained.

K-ROGET THESAURUS

Even experienced writers are frequently at a loss for "just the right word." Kuma's K-Roget Thesaurus offers a handy way to access synonyms for over 150,000 words. While K-Roget's "look-up" engine requires less than 60K of memory, its synonym files add up to almost a full megabyte of diskette storage. This means that running K-Roget requires a minimum of a 512K ST with two double-sided disk drives or a one-meg ST with one double-sided disk drive and a dedicated 400K RAM disk.

Given that you're willing to dedicate such resources to a Thesaurus, installation and setup is handled by an easy-to-use install program. K-Roget is designed to work hand-in-hand with Kuma's K-Word word processor. K-Word allows words in documents to automatically be sent to K-Roget for lookup and be replaced with selected alternatives. Users of other word processors must manually type words to be looked up into K-Roget, and type the desired alternative into their document afterwards.

K-Roget is very quick at word lookup and offers a wider range of alternative words than usually found in computer-based thesauruses. Kuma's eighteen-page manual is indexed, but is rather spartan, containing only a single illustration. K-Roget hails from England; therefore the wording of the instructions seems a bit stilted and hard to follow at times. While you can call Kuma via phone with questions, the cost of overseas phone calls may deter some prospective users. ■

If you'd like more articles like this, circle 157 on the Reader Service Card.

Arlan R. Levitan is a Senior Regional Systems Engineer for Amdahl Corporation, and was one of the founding board members of MACE (Michigan Atari Computer Enthusiasts).

PRODUCTS MENTIONED

- **Partner ST, Version 1.0**, $69.95. Timeworks, Inc., 444 Lake Cook Rd., Deerfield, IL 60015, (312) 948-9202
  CIRCLE 158 ON READER SERVICE CARD
- **DeskCart!, Version 1.01**, $99.95. Quantum Microsystems, Inc., P.O. Box 179, Liverpool, NY 13088, (315) 451-7747
  CIRCLE 159 ON READER SERVICE CARD
- **Thunder!, Version 1.1**, $39.95. Electronic Arts, 1820 Gateway Drive, San Mateo, CA 94404, (415) 571-7171
  CIRCLE 160 ON READER SERVICE CARD
- **K-Roget Thesaurus, Version 1.0**, About $85 (U.S.). Kuma Computers Ltd., 12 Horseshoe Park, Pangebourne, Berkshire RG8 7JW, England, 011-44-7357-4335
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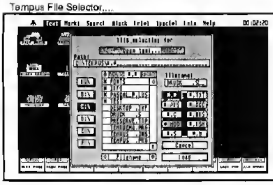
Tempus File Selector....



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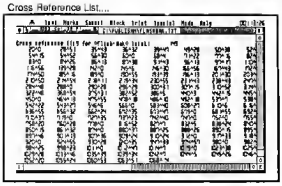

Tempus is a text editor with a difference! Most text editors are left waiting for GEM to update the screen, while Tempus ***zooms*** ahead thanks to specially written, speed optimized routines. For instance, Tempus can search and replace some 4000+ characters in about **7 seconds** and scroll a 50K document from top to bottom in around **15 seconds!** Tempus works in a standard GEM environment but at around **300-400% faster!** Tempus is fully compatible with most common language shells and is a must for ANY serious programmer!

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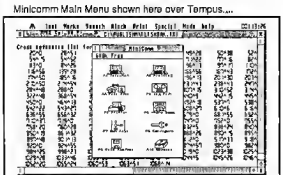

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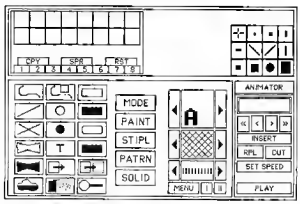

Quantum Paint's main control screen

Quantum Paint is, without any reasonable doubt, a **revolution in ST software!** And that's no advertising hype! For the first time ever, a software package written and developed specifically for the Atari ST has broken not only the 16 color barrier, but also the 512 color barrier! Using a specially developed interlacing technique (known as "Wideband Color"), Quantum Paint is able to display no less than 4096 colors on-screen at the same time! Quantum features four color modes in all - 4096 colors, 512 colors and 128 colors in low resolution and 32 colors in medium resolution.

Of course, Quantum also features everything you would expect from a good art package including patterned fills, dotted and normal lines, circles, rays, polygons, zoom, etc. Quantum also has built-in access to GDOS fonts - no need to specify which fonts you want in advance and create an ASSIGN.SYS file - just select the font you want off the disk!

Lastly, but by no means leastly, there's Quantum's built-in Delta-Frame Animator. Delta Animation is a technique whereby only the differences between frames are saved. Quantum's Animator is a powerful implementation of this technique and allows you to store hundreds of frames of animation in the same space as normal animators would allow only ten or so!

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GFA Artist

Paint, create and animate

BY JON A. BELL
START ASSOCIATE EDITOR

Figure 1: 512-color picture

GFA Artist is the newest example of an ST graphics superprogram, combining features from several different kinds of ST graphics software. Like DEGAS Elite and NEOchrome, GFA Artist comes with a large assortment of drawing tools, including features that let you alter and distort portions of your artwork in interesting ways. Like Aegis Animator ST and Cyber Paint, GFA Artist allows you to create animated sequences. And like Spectrum 512, GFA Artist lets you display pictures with more than the usual limit of 16 colors.

It's from GFA, the German software company that has made its reputation on innovative programs such as GFA Basic. But does GFA Artist really put it all together to give you the best of drawing and animation programs?

GETTING STARTED

GFA Artist runs on any ST with a megabyte of memory, a color monitor and TOS in ROM. But starting up the program isn't just a matter of booting your ST and double-clicking on the GFA Artist icon. First you need to reset your ST to clear out any desk accessories or other reserved memory; GFA Artist doesn't use GEM, and it won't share memory with any GEM programs. Then you must change to medium resolution (even though GFA Artist creates low-res pictures, it runs in medium res). Finally, a double-click on the program's icon brings you to GFA Artist's title screen, and pressing any key will bring you to the main menu bar, which appears at the bottom of a blank workscreen.

The menu bar in *Figure 2* is designated the F2 Function Selection Box. It contains all of the tools necessary for you to draw pictures, as well as background images and sprites for animation. The F2 Box also lets you load and save the images as DEGAS-compatible (.PI1) pictures. (It's called the F2 Box because you can select it at any time by pressing the F2 function key.)

The F2 Box consists of icons for 60 different drawing features, arranged in three rows of 20. At first glance this array seems overwhelming. Fortunately, the manual contains an extensive reference section; by going through it slowly and trying each feature, you can familiarize yourself with them quickly.

GFA Artist's primary strengths lie in this vast assortment of drawing features. The F2 Box includes the usual paint program features—lines, polygons, circles and boxes (both outline and solid), airbrush, eraser, fills (both standard and user-definable fill patterns) and brushes of various sizes. You can also include text in your pictures using a Gothic or Roman font. (GFA Artist comes with a font editor for designing your own fonts, too.)

Two interesting GFA Artist features are Smear and Flip. Smear will blend the transition between two colors by "roughing up" the border between the colors. For example, if you smear the border of a blue area where it touches a red area, the program creates a stippling of blue dots inside the red border, and red dots inside the blue. The Flip function lets you grab all or part of your screen and invert it horizontally, vertically or both. You can create a reversed, inverted or even upside-down mirror effect.

But what sets GFA Artist apart from other ST paint programs is its handful of image manipulation features. For instance, you can grab a section of your picture (or your entire screen) and then distort it in various ways—altering its size, angles or perspective. The Parallelogram functions are similar to DEGAS Elite's Skew, letting you grab an image and then distort it along one plane, either horizontal or vertical, pulling it like taffy. The Vertical and Horizontal 3-D effects allow you to distort a rectangular block into a trapezoid, "flattening out" the image to give it the illusion of perspective.

Best of all are the Globe and Drum features. With Globe you can grab a rectangular image and form it into a circular or oval shape. Drum lets you wrap an image around a cylindrical shape. These image-manipulation features operate almost as texture-mapping—something I've seen in no other ST paint or animation program. Both Globe and Drum can also be used to create animated sprites if you specify the starting and ending configurations of an object.

ANIMATION FEATURES

After you're familiar with GFA Artist's drawing features, you can use them to create short animated sequences. Pressing the F1 function key switches to the F1 Function Selection Box, which gives you access to the animation functions.

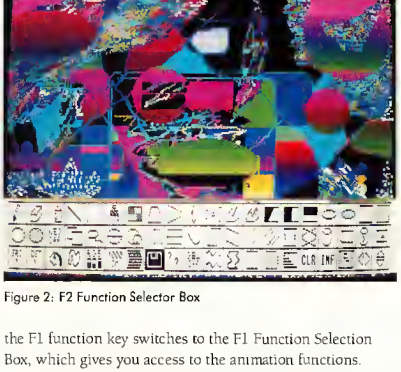

Figure 2: F2 Function Selector Box

The F1 Box functions let you define, copy and delete animation sequences, background images, groups of sprites and the frames of your film. GFA Artist uses all available memory to create sprites and frames—although you must be judicious in your use of animation. Moving large blocks of images will eat up memory (and available frames) very quickly. However, according to the manual you can run animations of up to 2,000 frames on a 1040 ST using GFA Artist's Run Only Interpreter program.

You can specify the starting and ending configurations of a particular shape and define the number of frames you want it to occupy; GFA Artist will generate the intermediate positions between the beginning and ending frames (a process called *tweening*). Because of the unique image-manipulation features of GFA Artist, you can use tweening to create bizarre metamorphic animation—images you can't get with other ST paint programs.

Once you've created tweened segments of animation, you can combine them with individual drawings (such as multiple positions of a cartoon figure's arms or legs), overlay them on various backgrounds (created with GFA Artist or other DEGAS-compatible drawing programs) and then link all of the files together with the GFA Artist Film Merger program.

BREAKING THE COLOR BARRIER

In addition to its powerful drawing features, GFA Artist has a bonus: it allows you to display up to 512 colors simultaneously on your ST's screen, from a palette of *1,021* different colors. According to Rob Washburn at MichTron, GFA Artist's designers used special technical tricks to create "half shades" – going in between the ST's 512 possible colors to provide even more hues.

Though it sounds like an interesting feature, it remains more of a curiosity than a really useful tool. You can't actually ▶

GFA Artist . . .

draw with 1,021 colors. Instead, you must use a complicated process in which you draw in one of the usual 16 colors, then choose two colors between which GFA Artist will create a transition, and finally define a horizontal band on your screen over which the transition will take place. A picture of a sunset would be a natural for this process, but to take full advantage of this feature for most pictures, you would have to plan your artwork *very* carefully, taking note of exactly where you want each shade to fall.

(You can't use the 1,021 color mode for animation, though. According to MichTron's Washburn, the ST's 68000 microprocessor simply can't keep up with the demands of displaying 512-color-plus animation.)

THE MANUAL

GFA Artist comes on two single-sided disks, with a 90-page manual. The first disk contains the Artist program itself and a Gothic font; the second disk contains the Run Only Interpreter (for running GFA Artist animations without the actual program), a Roman font, a font editor and several animation demo files.

The manual is relatively thorough. It begins with a short "Getting Started" section, and then presents a strong reference section that explains each feature of F2 and F1 boxes. It's easy to follow through the manual and test each of the drawing features, doodling on one of the four available workscreens. That won't work when you hit the reference section for the

Figure 3: Horizontal and Vertical 3-D effect

animation features, though. You can't simply test the animation commands individually, since you have to follow a specific procedure with certain commands *after* you've created an image or sprite with the drawing features.

There's also a series of appendixes at the end of the manual, including a tutorial on using the animation features. The tutorial gets you going, but it's much too short, and since it's hidden at the back of the manual it's easy to miss. The other appendixes cover picture formats, the Run Only Interpreter, the Film Merger, the font editor, and a helpful tips and tricks section.

DOUBLE TROUBLE

Although GFA Artist has some fascinating capabilities, it also has bothersome aspects. It doesn't use GEM, which means you can't use GEM desk accessories while you're running the program. Selecting features from the F1 and F2 boxes is annoying, too: Instead of the usual point-and-click with the left mouse button, you must hold down the left mouse button, point to the icon you wish to select, then click with the right mouse button. This goes against the grain of almost every other ST program, particularly drawing programs.

What sets GFA Artist apart is its handful of image manipulation features.

What's doubly irritating is that once you finish using a particular drawing feature on your workscreen, you *automatically* return to the F2 Box. As a result, with most of the drawing features you can perform only *one* action at a time. After drawing a circle, for instance, the program returns you to the F2 Box; you have to select Circle again, go back to your workscreen and draw a second circle, and then repeat the process if you want more circles. This is both frustrating and time-consuming, and a major problem with the program.

Other caveats: There is no Quit function—you have to reset your ST to leave the program. You also cannot easily import GFA Artist animation files into other ST animation programs, such as Animator ST and Cyber Paint; you must save each frame of your Artist animation sequence as a NEO or DEGAS picture, then load those frames one at a time into another animation program.

Finally, the manual vacillates between being clear and concise and being maddeningly obtuse, especially in the appendix dealing with the Film Merger feature. In addition, some of the information on *exactly* how to use a particular feature is simply wrong. For example, the manual says that to use Lasso you must click the left mouse button; in fact, you click the

right button. There are also a few descriptions of the F2 Box icon layout that are misplaced.

CONCLUSION

GFA Artist combines features of drawing and animation programs, including the ability to display more than 16 colors at once on your ST's screen. It has many things to recommend it, including some image-manipulation functions found in no other ST drawing program.

It also has some major problems weighing against it. For some users, the awkward, nonstandard user interface will prove too much to take. The fact that you can't easily move animations between GFA Artist and other programs is inconvenient, and the occasionally convoluted manual is also a problem. You should certainly try GFA Artist at your local computer store before you buy it.

But if you can work within its limitations, GFA Artist's powerful drawing features, combined with its animation capabilities, make it a solid and useful tool for drawing and animating on your ST. ■

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- **GFA Artist**, $79.95. MichTron, 576 South Telegraph, Pontiac, MI 48053, (313) 334-5700, BBS (313) 332-5452.

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Hanging Out At The Electronic Mall

by Gregg Pearlman

START—and Antic Publishing as a whole—has spent most of its online time roaming CompuServe's corridors. There are several of them, covering a wide range of topics and interests. You could spend hours trying to explore every corner of CompuServe and find that you still have a lot of ground to cover. Lately, however, we've been paying a good amount of attention to GEnie and we've noticed something refreshing: there's less to explore. But don't be fooled by that; they're both labyrinths; GEnie's just the smaller of the two.

But even if you're a die-hard CompuServe user, it's not that hard to find your way around. Type "M100" to Move to page 100 and find out what's new on GEnie. As of December, the Medical, Education, Genealogy, Writers and Science Fiction RoundTables (RTs) had been added.

Another new feature is the Ski Resort Database, a subdivision of the Adventure Atlas which contains information on over 2,100 resorts for downhill and cross-country skiing in the United States and Canada. Type ATLAS at a menu prompt.

On page 400 is the LiveWire CB simulation. Some "reeeeeally strange people await you there," says the sysop, Muffy, in the welcome message. Options include instructions, command summary, enter LiveWire, Muffy's Gossip Corner and National Real Time Conference.

Possibly the most important GEnie service is GEnie Mail (page 200), which lets you check and read your mail, send or upload a text letter, search addresses, enter command mode, send a "QuikGram" hard copy or transfer an XMODEM file.

The Electronic Mall isn't limited to software, either—gift items abound.

The GEnie travel area, starting on page 750, features American Airlines EAASY SABRE, American Express ADVANCE, the TRAVELDATA database, the Traveler's Information Services RT and the Adventure Atlas. American Airlines EAASY SABRE (page 760) lets you retrieve flight, hotel, and weather information and book flights and hotel rooms—all at normal GEnie rates and without surcharges. Choose selection 3 of the menu to log on to EAASY SABRE.

The American Express ADVANCE service (page 765) is a 24-hour source of information on travel, shopping, insurance and investments. Apply for an American Express card and find out about special Cardmember services, such as GLOBAL ASSIST and BE MY GUEST Restaurant Gift Certificates. Or plan a family vacation.

The TRAVELDATA database on page 770 is a comprehensive guide to hotels, motels, resorts, airport-to-city transportation, car and limousine rentals, travel advisories, passports and other travel related information for more than 150 major cities worldwide. The system contains over 4,000 hotels, more than 2,000 restaurants and more than a dozen rental car companies, as well as an 800 number directory for airlines, cruise lines and rental car companies. And the Adventure Atlas on page 775 helps you pin down excursion ideas above and beyond the common vacation.

Finance information starts on page 600 and features stock quotes, Dow Jones News Retrieval and hourly business and financial news provided by NewsGrid Headline News, a real-time news service, compiled from the dispatches of seven of the world's largest U.S. and international wire services. Though it mainly focuses on U.S. and international business, NewsGrid gives comprehensive coverage of world affairs, political issues, sports and feature items.

On page 304 is GEnie's USA Today Decisionlines section, which includes current news, advertising, banking, business law, sports, technology and market trends. And Professional Services, page 525, include the photography RT, LEGACY, the law RT, Desktop Publishers (NADTP) RT, the Winchell Typesetting Service Bureau, and the ▶

Writers', MIDI/WorldMusic and Medical RTs.

Attention, GEnie shoppers: shopping services begin on page 700 and include product ordering, extensive classified ads (page 740) ranging from boats for sale to announcements to personals to pets to farms for sale, the Computer Express shopping service, American Express ADVANCE, Comp-U-Store Online and Junior Achievement Sales.

The Game Room (page 800) includes the Games RT, several adventures, a show-biz quiz and two football pools. Hobbies & Leisure Interests on page 520 include RTs for genealogy, scuba, and science fiction and fantasy. There's also CINEMAN Entertainment Information, Hollywood Hotline movie reviews and the GEnie Banner Maker. And the Reference Library on page 301 features Grolier's Encyclopedia, CINEMAN, Hollywood Hotline, Rainbo Electronic Reviews, PhotoSource International and the Medical RT.

ENTER SOFTEX

Now you can download ST software products from a number of different publishers (including Antic Software) through CompuServe—or have them delivered straight to your door. Whether you buy your software through CompuServe's new Softex electronic sales and delivery system or through the mail, the price will be the same—but Softex will get it to you in the time needed to download it. If you use Softex, the cost of your purchases will just be added to your monthly CompuServe bill. If you buy your software through the Electronic Mall the cost will end up on your credit card statement.

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We've spent most of our online time roaming CompuServe.

If you do decide to buy the product, you'll be given an estimate of the download time at your current baud rate. (Download time may vary by up to 25%, depending on telephone line noise and other factors.) Then you'll be asked to confirm your decision to make your purchase.

THE ELECTRONIC MALL

The Electronic Mall is where you'll find software that requires extensive documentation. The main difference is that if you order from the Electronic Mall, you'll receive the actual package in the mail. To get there, just type GO ANTIC. On the menu, choose 10 to go to the Antic Software Catalog. Then choose 3 for the online catalog of products. The menu has the following choices:

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Eventually you'll be asked for a credit card number, and the package is yours.

The Electronic Mall isn't limited to software, either. Gift items abound—records, books and flowers, for example. Whether you're shopping for yourself or a loved one, you'll find these and other items are just a connect tone away. ■

Gregg Pearlman is the Assistant Editor of Antic.

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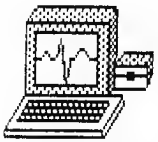
- **GEnie (General Electric Network for Information Exchange),** General Electric Information Services Co., 401 N. Washington Street, Rockville, MD 20850, voice phone (800) 638-9636.



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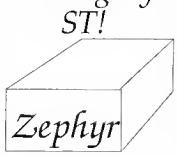

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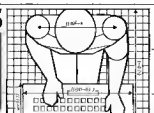

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The Bard's Tale, Rings of Zilfin and Pinball Wizard

by David Plotkin

This issue, we've got two of one, plus a lone wolf—a duo of role-playing adventure games and a construction-set-style arcade game. Luckily, all three are linked by a common thread—they're fast-moving, have splashy graphics and are lots of fun to play!

THE BARD'S TALE

The Bard's Tale is an animated role-playing adventure in which you guide the actions of a party of up to six adventurers. Your party explores the town of Skara Brae, seeking fame, fortune and a way to defeat the evils of Mangar, who has cursed the town and made it a rather unpleasant place to live.

The Bard's Tale

You can create the members of your adventuring party (choosing from six races and as many character types) or use the pre-built group supplied with the program. There's a map of Skara Brae included with the game, so you can get started quickly, exploring the weapons and energy shops, taverns, temples (where wounds are healed—for a price), and the inevitable dungeons.

On the streets of the town are all sorts of really nasty individuals; some are human, and some are not. When faced by an enemy, you have two choices—run or fight—but clicking on Run doesn't always work. Then you must fight—attacking the enemy or defending yourself.

If any of the adversaries are still alive at the end of the encounter, you can again choose to run or fight. Defeating an attacker is good for experience points and gold, always a useful commodity in a world where reincarnation can cost 1,800 pieces of gold.

The main screen in The Bard's Tale is divided into a small window which shows the well-done graphics of the town, a window which prompts you for instructions and an area which shows the current state of your characters. The sound is digitized and quite a large number of tunes are played when the Bard sings. Most commands can be chosen by use of the mouse pointer.

For example, placing the pointer in the "town graphics" window changes the pointer to a direction indicator, so you can choose to move in one of four directions. Unfortunately, the algorithm which reads the mouse buttons needs some work, so multiple presses of the button are often necessary to get the program to acknowledge your choice. You can only save the game at the Adventurer's Guild building. If your characters are killed, your character disk is updated to reflect this fact, *even for previously-saved games*. I recommend you keep a backup character disk, so you can restore from an earlier save and "reincarnate" your characters.haracters.

In The Bard's Tale you explore the town of Skara Brae, seeking fame and fortune.

The Bard's Tale is a difficult adventure with good graphics and a decent control setup. Be prepared to die *a lot* until you finally manage to build up some powerful characters. I think you adventuring fiends out there will enjoy this program. A hint book is available from Electronic Arts for $12.95.

RINGS OF ZILFIN

Rings of Zilfin (ROZ) is a fantasy role-playing adventure which features puzzles, good graphics and remarkably addicting gameplay. You are the hero, whose ultimate mission is to defeat the evil (of course) Lord Dragos, who has brought darkness to the land of Batinique. ▶

To do this you need money—which you get first by stealing and selling gems, and later by trading goods for a profit. You can move within a town, talking to the townspeople and visiting temples, merchants, healers and fortune tellers. You'll also travel from town to town, which is hazardous—you'll run into all manner of menaces, defending youself with swords, arrows, and magic. You'll also find water that may strengthen or poison you, and magic mushrooms of many varieties.

Rings Of Zilfin

The graphics in ROZ are good. You control a small character on the screen using the mouse or keyboard. All commands are available from the mouse, making the game very easy to play. You can check your inventory and use any object you are carrying. The left mouse button lets you strike in battle, and your character is well animated as he walks along the road or does battle with enemies. The background graphics are also well-done. The scenery scrolls smoothly as you walk along the road, and there are detailed graphics of the interiors of the buildings. Things do move slowly, though, and I wish there were some way to bypass some of the more lengthy animation sequences.

Some of the animation does not appear to have been carefully crafted. For example, when there are many enemies on the screen, they all move very slowly, but as you kill them off, the remaining ones move faster (the program is animating fewer characters) to the point that your arrows can pass right through the enemies as they flash across the screen. The animation sequences and graphics have to be loaded from disk, which can slow down the gameplay somewhat, although the files are not that big. ROZ comes on three single-sided disks which you must switch periodically, although this doesn't happen too often. One very nice thing is that the game is not copy-protected in any way. I was able to install it in a folder on my hard drive (requires almost a megabyte free) and play from the hard drive. Needless to say, this speeded things up considerably.

The real place that ROZ shines is playability. The game increases in difficulty only very gradually, so that it is relatively easy to stay alive and build up your health and equipment. The object of the programmers did not seem to be to kill you off, but instead to strain your brain to solve the mysteries. You *can* die, but with a little care you don't have to deal with "getting killed in the first five minutes" syndrome that can make an adventure game so frustrating. Some of the limits on what you can carry are ridiculously high, perhaps to give a better chance of surviving. For example, when I crossed the pass into Begonia, I was carrying 99 bows, 8,000 arrows, 99 packets of tobacco, 99 toys and 99 bolts of silk. Quite a load for an adventurer wearing heavy armor!

I highly recommend Rings of Zilfin because of the good graphics, excellent playability and demanding gameplay. This adventure has some arcade battle sequences as well as all the elements of a good fantasy adventure.

PINBALL WIZARD

Pinball Wizard from Accolade is a construction set enabling you to build and play your own pinball games. It allows you to customize the game in many ways, using prebuilt obstacles as well as letting you paint designs on the screen. It's also mouse driven and very easy to use.

There's a built-in game, of course—and it plays a mean game of pinball. You control left and right flippers, and can bang the machine (but not too hard or it'll tilt.) The action is smooth, fast and fun.

But the heart of Pinball Wizard is the construction set that lets you assemble spinners, bumpers, drop targets, lights, kickers, one-way doors, flippers and many other elements into your own pinball games—all mouse-controlled. You can also use the paint menu to draw in 15 colors—either as decorations or obstacles. You can modify characteristics like tilt sensitivity, ball speed,

Pinball Wizard

number of balls per game—and, of course, special scoring combinations. When you're satisfied with your design, you can save it to disk—and reload it later if you want to make changes.

The graphics in Pinball Wizard are excellent. The sound is also very realistic, though you cannot choose what

sound goes with which target. Another serious limitation is that you must have a copy of Pinball Wizard to play a game designed with it—the games are not stand-alone.

Pinball Wizard is a construction set enabling you to build and play pinball games.

Pinball Wizard is an easy-to-use construction set for designing pinball games, and it allows you a great deal of freedom in the design of the pinball game itself. You must decide whether it is important to you to be able to customize the score graphic and produce stand-alone games in making your purchase decision. ■

David Plotkin is a chemical engineer employed by Chevron U.S.A., and is a frequent contributor to START *and* Antic.

PRODUCTS MENTIONED

- Tales of the Unknown, Volume 1, "The Bard's Tale," $49.95. Interplay Productions, distributed by Electronic Arts, 1820 Gateway Drive, San Mateo, CA 94404, (415) 571-7171.
  CIRCLE 165 ON READER SERVICE CARD
- Rings of Zilfin, $39.95. Strategic Simulations, Inc., 1064 N Rengstorff Ave., Mountain View, CA 94043, (415) 964-1200.
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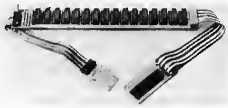

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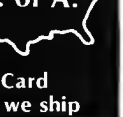

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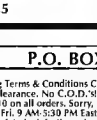

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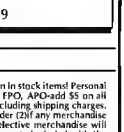

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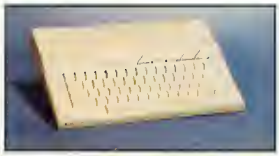

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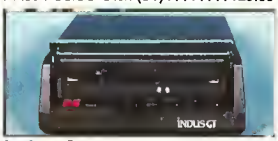

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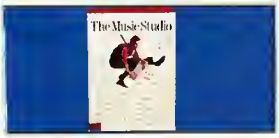

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CIRCLE 006 ON READER SERVICE CARD

A TASTE OF PROLOG

Exploring AI on the ST

by Christopher F. Chabris and Gene Weiss

Adrian Doy

The Fifth Generation. It's Japan's concerted project to design computers that really understand their users. That takes Artificial Intelligence—and the language of the Fifth Generation Project is Prolog. Join AI expert Christopher Chabris and programmer Gene Weiss for a tour of the Prolog world on the ST—including a ready-to-run version of Prolog on your START Disk!

You'll find the progrom for this ortricle in the file PROLOG.ARC on your START Disk.

Before you think about Prolog, think about the bad old days for a moment.

The first personal computers didn't use a mouse or drop-down menus. To do anything with them required often-cryptic commands that were easy to forget or mistype. Back then, computers were confusing and hard to use.

The current generation of more powerful machines—including the Atari ST—use the mouse-and-menu user interface that's opened up the personal computer for a whole generation of new users. It's an easier, friendlier way of using a computer that makes it much easier for you to understand your computer.

Now imagine what it would be like to have a computer that understands *you*. One that can comprehend ordinary English, instead of requiring commands or even mouse-clicks. Now *that's* user friendly.

And that's what Japan's Fifth Generation Computer Project is all about: making a truly intelligent computer. It's probably the largest artificial intelligence project in history—and the official language for the project is Prolog.

For a decade after it was first created in Europe, Prolog was little more than an obscure toy for computer scientists. But since the Fifth Generation project was launched in 1982, Prolog has grown into a full-scale applications development language used by thousands of programmers. It's now one of the hottest programming languages around.

Prolog is a hot item on the Atari ST, too. There are two major commercial implementations of Prolog for the ST: XPro from Rational Visions and MProlog from Logicware. But if you're not sure whether Prolog is the language for you, you're in luck—you can try a limited version of Prolog on this issue's START Disk.

WHAT PROLOG IS

Modern computers have been around for more than 40 years now, and the pioneers who built the first machines would scarcely recognize today's computers, so great has the improvement in hardware been. But they would have no trouble recognizing our methods of programming—the process has changed very little since their days. There are three basic steps involved:

- Reserve areas in memory to hold data structures whose contents will change an indefinite number of times during the program's execution.
- Create a program which will tell the machine in the most painstaking detail just how to manipulate the data in the data structures.
- When the program fails to work properly (and it will), spend a great deal of time debugging it, getting very upset in the process.

This process has come to be seen as a natural, almost inevitable, way to tell a computer what to do, and it's difficult for us to imagine that there's any other way. But any programmer who's spent time involved in this process must come to the conclusion that it's simply unsatisfactory.

Not surprisingly, an enormous effort has been under way to find a better way to program. Prolog uses an approach called logic programming (in fact, its name is shortened from the phrase "Programming in Logic"), attempting to adapt some of the principles of logic to computer programming. Consider the following informal statement:

A man is wise if he is Greek and he's a philosopher.

If you think about it, there are two very different ways to read this sentence. Obviously it's a declaration of a fact about Greek philosophers. But at the same time, it can be seen as a procedure for solving a problem. The sentence can be paraphrased, "If you want to find out if a man is wise, first find out if he's Greek, and then find out if he's a philosopher."

This dual meaning—the declarative and the procedural—is one of the central insights of logic programming. What it means to the programmer is this: If you very carefully and logically declare what you know about a problem, you are at the same time implicitly defining a procedure for solving that problem.

A Prolog program consists of a database of facts and rules (called *clauses*), both expressed in a syntax borrowed from formal logic. The basic building block of clauses is the predicate, which ▸

expresses something about some elements of the world. For example,
philosopher(Plato)
simply states that Plato is a philosopher. In this example, "philosopher" is the predicate, and "Plato" is its argument. (Don't confuse either the syntax or the vocabulary with that of a function call in a conventional language like Pascal; although a predicate and a function call can often be thought of in similar ways, they're really not the same thing at all.)

If you declare what you know about a problem, you are defining a solution.

Predicates may also express *relationships* between two or more things: the predicate
teacher_of(Plato,Aristotle)
tells us something about the relationship between two philosophers (in this case, that Plato is the teacher of Aristotle).

You can even use variables in predicates. In
teacher(Plato,x)
the *x* is a variable which can be filled in with pretty much anything. Again, be careful with the similarities to conventional languages: a variable in Prolog is quite different from a variable in Pascal.

All the clauses introduced so far are facts, because they state unconditional truths. These facts can be combined to form conditional rules about the database. For example,

wise(x) :- Greek(x), philosopher(x)

is Prolog's way of stating the informal rule mentioned earlier: a man is wise if he is both Greek and a philosopher. "Wise(x)" is called the *head* of the rule, and the part after the ":-" is known as the *body*. Notice that now "wise(x)" may or may not be true, depending upon the body of the clause. Facts and rules together constitute a database, like this small example:

wise(x) :- Greek(x), philosopher(x)
Greek(Plato)
philosopher(Plato).

If someone were to present this database to you and then ask you whether Plato was wise, you could, with a little logical thinking, answer yes—and so can Prolog. Although the database does not contain a single instruction for Prolog, the language itself knows enough about logic that it can deduce the answer. That's the ideal of logic programming: the programmer simply states the *what* of the problem, and Prolog provides the *how*.

If you're thinking that this sounds too good to be true, you're right. Prolog isn't a panacea for all programming problems. There are many jobs it is simply not suited for, and even when applied to the correct task, it doesn't work magic. If you believe Prolog will relieve you of the task of thinking, you're going to be disappointed. But if you're willing to try a new way of thinking about problems, you'll find that Prolog can be a very elegant language, and it is enormously powerful—it's amazing what 25 lines of Prolog can accomplish.

PROLOG APPLICATIONS

Because of its powerful logic programming features, Prolog has found a place in both the world of artificial intelligence (AI) and in conventional computer applications.

AI applications typically use Prolog's built-in database for facts and rules to store information appropriate to a particular problem. Expert systems are a natural application—the expert knowledge can simply be encoded as a series of Prolog facts and rules. And Prolog can also be used to build an intelligent expert system user interface.

Natural language processing is an area where AI meets conventional needs. For example, most database management systems have arcane command interfaces that require menu selections or query languages. A Prolog database might let you simply ask, "What are the salaries of the female employees?" instead of requiring a complex command.

Symbolic mathematics is another promising area. Prolog is poor at arithmetic and numerical calculation, but it's much more likely to be able to handle symbolic math, which works at the level of equations and variables. The goal is to create an intelligent assistant that can help practicing scientists with differentiation and integration, vector analysis, matrix manipulation, and other areas of higher mathematics.

Outside AI, Prolog is ideally suited to rapid prototyping of programs—and that's indispensable as software systems get larger and larger. Other mainstream Prolog applications include compiler design, digital electronic circuit verification, proving program correctness and teaching programming to children.

Since Prolog is a general-purpose language like BASIC and C, it can be used to create all sorts of programs. But Prolog really excels at applications like database management, logical reasoning and natural language processing—many of the key fields targeted for future generations of computer research.

XPRO

There are two commercial versions of Prolog that bring its power to the ST: XPro Extended Prolog from Rational Visions and MProlog from Logicware.

XPro is a straightforward Prolog interpreter based on the original version of Prolog developed at the University of Edinburgh in Scotland. (It's sometimes

called the DEC-10 version, after the computer it was developed on.) XPro is supplied on one single-sided disk containing the interpreter, a special run-only version of the interpreter and several programming examples

XPro offers all the standard features and syntax of DEC-10 Prolog, so it should run most programs found in books and magazines; when problems arise they should be relatively easy to fix. Its many standard primitives support metalevel programming (**assert**, **retract**, **=..**, **call**, etc.), input/output, operator definition and definite clause grammar translation. Through an innovative extension to traditional Prolog, you can also create and manipulate arrays in memory using the **peek** and **poke** primitives To cut down on annoying parentheses and make interactive programming more convenient, XPro predefines the built in single-argument predicates as prefix operators. In general, XPro's implementation of Prolog is excellent.

Unfortunately, the XPro manual is not. It's only 20 pages and lacks an index—hardly adequate for documenting a complex programming language. System primitives get only a line or two each; you're referred to Prolog textbooks like *Programming in Prolog* for fuller explanations. Several BIOS, XBIOS and GEMDOS functions are available as primitives, but the manual just refers users to example files on the disk, admonishing "study them carefully." (XPro's sample programs *are* illustrative, and also well-written and useful.)

The MProlog manual is a joy.

Likewise, the interface to the GEM AES and VDI, via the **aes** and **vdi** primitives, is discussed in only four paragraphs. What XPro sorely needs is a library of prewritten predicates that use these features. (You can, however, make any AES or VDI call if you have the patience to code the intricate parameter lists.)

XPro also has a built-in text editor that can handle only about 100 lines worth of text. Most Prolog program segments are smaller than that, but it's an annoying artificial limitation. For debugging, the **trace** primitive causes each goal to be printed out as it is called and either succeeds or fails, along with the depth of recursion at each step.

XPro earns kudos as the system that lets you distribute your ST Prolog applications. The **save** primitive dumps the current database contents into a file called KBASE that is automatically reloaded when the run-only interpreter is executed. That means you can simply rename the run-only interpreter and make sure KBASE is in the same directory, and you have a stand-alone application. According to the manual, you can distribute such applications "free of licensing restrictions."

XPro will appeal to several groups of users: programmers who have experience with DEC-10 or C-Prolog on larger machines and want a similar environment for their STs; students who prefer the more responsive environment of the ST to a timesharing system for their programming assignments; and developers who need to create a GEM interface for their Prolog programs.

MPROLOG

If XPro is the economy model of Prolog for the ST, MProlog is the luxury model. It was originally implemented for developing applications on mainframe computers, and it's currently available for machines ranging from supercomputers to PCs. The same Prolog language syntax and features are used by all versions, making them source code compatible.

But the feature that is unique to MProlog is *modular programming*. Modularity lets you break large programs into distinct modules. The code in one module is "invisible" to any other module, which makes the programs easier to understand and maintain. MProlog adds this idea to the DEC-10 standard, and MProlog's **Logic-Lab** and **PDSS** programming tools encourage modularity.

XPro will appeal to developers who need GEM in their Prolog programs.

MProlog comes on two double-sided disks, with a large collection of manuals The interpreter, pretranslator and consolidator programs are all GEM-based, with menus for commands and windows for log reports and interaction. To develop a Prolog program with MProlog, you first use a text editor to prepare the first draft of a program module, then load it into PDSS for debugging and modification. With PDSS you can enter facts and rules, read and write source files, and debug your program. You can control the debugging environment by setting the stack size, print level, and many other parameters.

Once you're satisfied with the module, you can pretranslate it; and once all your modules are working, you can consolidate them together and load the result into the interpreter for final use ▶

without PDSS. You can also consolidate PDSS into your program to have it available in case you need it.

MProlog provides a rich selection of built-in predicates. Every feature of DEC-10 Prolog is implemented with extensions, although the names of some predicates are different. If you only know DEC-10 Prolog, there's a DEC-10 compatibility module that alleviates the problem caused by the different predicate names. There's a selection of advanced utilities for manipulating lists and strings, controlling execution and mathematical functions in source code on the disk, along with the Eagle Graphics system (a sort of advanced turtle graphics).

The MProlog manual is a joy to read and work with. Its nearly 600 pages are divided into reference sections for the language and development system, a discussion of the differences between generic MProlog and the ST implementation, an installation guide, and references to the utilities and Eagle Graphics additions. The descriptions of individual predicates are very thorough.

(Logicware also sells *A Primer for Logic Programming* by Richard J. Young, a 500-page book/software combination that guides you through most aspects of the Prolog language. Between the manual and the primer, that's *1,100 pages* of documentation!)

There are some major drawbacks to MProlog, though. Aside from the Eagle Graphics and a few functions for menus and dialog boxes, there is no comprehensive interface to GEM and TOS calls. However, the development system is GEM-based and can't use a command-line interface – perhaps the worst of both worlds, making the transition between text editor and PDSS slow and cumbersome. And despite its 25 pages of index, the gigantic manual can be daunting at times. All in all, though, MProlog is a superb language system; its documentation is splendid, and its modularity and portability should help bring Prolog applications from other systems to the ST.

MProlog, with its online tutorial, Eagle Graphics, and extensive documentation, is for programmers working on professional research and development projects that require superior Prolog features and performance but not much use of GEM. MProlog also offers portability across a wide range of environments, including IBM mainframes, Unix and MS-DOS computers.

MProlog's modularity lets you break large programs into distinct madules.

A TASTE OF PROLOG

XPro and MProlog are well-designed, complete implementations of Prolog. But if you want to get a taste of this language that's causing so much excitement, you don't have to look beyond this issue's START Disk. There you'll find G-Prolog – the G is for Gene Weiss, who programmed the language for START. G is also for *generic*; G-Prolog isn't as fancy as the name brands, but it's cheap and it does the job.

To get your taste of Prolog, first copy the file PROLOG.ARC and the program ARCX.TTP to a fresh disk. Double-click on ARCX.TTP, and in the box that comes on the screen, type the filename PROLOG.ARC and press the Return key. The disk will spin for a minute or so, the program will print messages on the screen and when it returns to the Desktop you'll find G-Prolog and a set of documentation and sample files on the disk.

Be sure you read the file GPROLOG.DOC before you try to use GPROLOG.PRG; you can read it by double-clicking on GPROLOG.DOC from the Desktop, then select either Show (to read it on the screen) or Print (to print the file on paper).

RESOURCES

If you're interested in Prolog code, information, and tutorials, there are several places to find them.

Among the best books on the language are *The Art of Prolog: Advanced Programming Techniques* by Leon Sterling and Ehud Shapiro; *Prolog Programming for Artificial Intelligence* by I. Bratko; *Programming in Prolog* by W.F. Clocksin and C.S. Mellish; and *Prolog for Programmers* by F. Kluzniak and S. Szpakowicz, which includes the source code for a Prolog interpreter called Toy-Prolog. *AI Expert* is a monthly magazine that covers Prolog and other kinds of artificial intelligence programming.

CompuServe's AI Expert Forum (type GO AIE) has a Prolog library, a Turbo Prolog library, and all the programs published in *AI Expert* magazine. BIX (the *Byte* magazine Information Exchange) offers an AI conference, a separate Prolog conference and a section of its Listings library for Prolog items. The Usenet network of Unix computers has a **comp.lang.prolog** newsgroup; you can get access to Usenet through systems such as Portal and the Well (the Whole Earth 'Lectronic Link). Finally, anyone with access to ARPAnet, the Defense Department-sponsored computer network, can subscribe to the electronically mailed *Prolog Digest*.

Prolog's not to every programmer's taste – and it isn't perfect for every application. The language's special features can make program development a dream or a nightmare. But if logic programming is what you want, the ST is the way to join AI's next generation. ■

If you'd like to see more articles like this, circle 190 on the Reader Service Card.

Christopher F. Chabris, who lives in Cambridge, MA, is the author of Artificial Intelligence and Turbo Pascal. *Gene Weiss is a programmer who lives in Saint Paul, MN.*

PRODUCT INFORMATION

- **XPro**, $39.95. Rational Visions, 7111 W. Indian School Road, Suite 131, Phoenix, AZ 85033, (602) 846-0371.
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- **MProlog**, $199; Prolog: A Primer for Logic Programming by Richard J. Young, $49. Logicware, Inc., 5915 Airport Road, Suite 200, Mississauga, Ontario L4V 1T1 Canada, (416) 672-0300.
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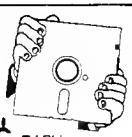

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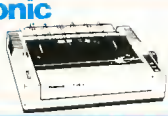

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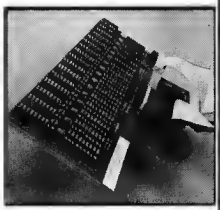

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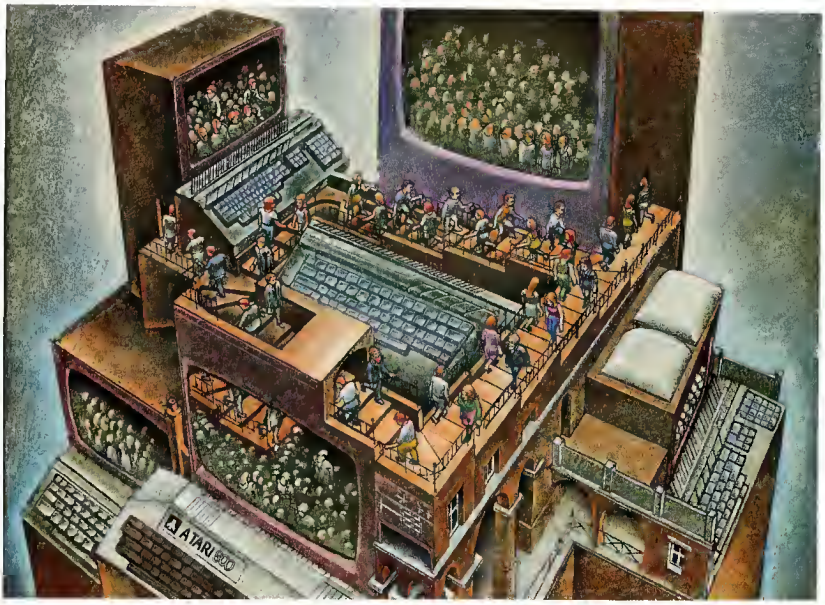

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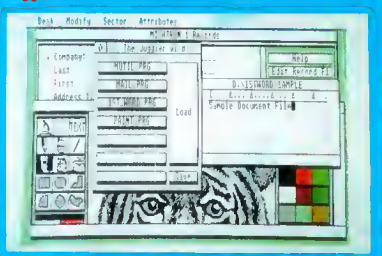

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We've worked overtime to make Antic software the best you can buy for your Atari. Why? Because we live and breathe the Atari line of computers. We were there at the beginning, are there now, and will always be there—supporting the Atari user. We design our software *exclusively* for the Atari machines and know Atari hardware inside and out.

*Gary Yost and Jack Powell (the product development team) are 'brainstorming' specs for a new CYBER add-on. Gary and Jack have been Atari users since 1981, and have been with Antic since 1983. Gary may be found, almost nightly, on CompuServe's SIG*Atari, talking with Atari users and programmers, fielding questions, and uploading demos—keeping his finger on the pulse of the Atari community. Jack bases his experience on years with the Antic Editorial department. Instrumental in the development of* ST Resource *and* STart, The ST Quarterly, *Jack has kept in touch with readers' problems and needs—particularly in the area of written technical information.*

Because we've been here the longest, we know the most people—and they know us. We've got the best Atari software because we've got the best Atari programmers. Simple. Tom Hudson's been writing programs for Atari computers for as long as we've been in business. He's not just a programmer, he's a close friend.

And, yes, we've got an unfair advantage: *Antic* magazine and *STart, The ST Quarterly*. We're not only a resource to the Antic community. The Antic community is a resource to us! In 1985 we sponsored a $2,000 DEGAS art contest. This was how we met Darrel Anderson.

Darrel Anderson is far more than a contest winner. He's a professional artist who knows the graphics possibilities of the ST computer. And professional means he's flexible and he's fast with results. And the faster he is, the sooner you get your program. Want clip art for CAD-3D? Darrel creates FUTURE DESIGN DISK, the most complex CAD-3D objects we've seen on this system. Want to show what CYBER STUDIO can really do? Darrel blows everyone away with CYBERSCAPE. What if you've got a 512-color paint program you want to show off? Just turn the page and check out the SPECTRUM 512 art.

And, when the beta testing is finally complete, the documentation typeset, and the package design finished, it's time to get the final product to *you*.

Have you noticed our new 800 number? That's right, we've moved our 800 operators in house.

Now, you when you call and ask for a "Bifurcated Cyber Diphlex," your operator will know what you're talking about, because an Antic staff member is not just an answering service. (And remember, our toll-free number is for orders only.)

Once your softwore is shipped, our job hos just begun. Antic hos the best follow-up ond customer support of onyone in the Atori softwore business. Our customer service people ore ready for your colls. Our technicol resources ore second-to-none. (If Scot Tumiin con't onswer your technicol question, he con olwoys turn to the Editoriol progrommers: Potrick Boss, Chorlie Jockson, or Fronk Hoyes.)

Once your order is token, it's processed as quickly as possible. Fidez Bituin hondles the poperwork becouse she is occurote. She olso hos o background in occounting, so she knows whot's being entered in thot computer. When Fidez processes your order, you get the right progrom—ond you get it now!

We used to hove on outside compony pockoge ond ship our products. We'll never do thot ogoin! They couldn't hondle it, ond they reolly didn't core. We con ond we do. All our pockoging ond shipping is now done in-house, supervised by Fronk Ciminesi. Fronk's got o thing obout secure pockoging, ond he's got o thing obout quick turnover. He con't stond hoving orders cluttering up his moilroom. Fronk will hove your shipment snugly pocked, in the truck, ond on its woy.

And Antic's customer service is not limited to telephone support or correspondence.

We're the most active Atari company on CompuServe, and have our own online service, ANTIC ONLINE (type GO ANTIC).

Through CompuServe, you can address anyone in Antic plus many of the actual authors of Antic Software (including Tom Hudson and Alan Page).

One of our customers recently had a problem with one of our products (okay, okay, we're not perfect), and left us a message on CompuServe. We contacted the author, who solved the problem and mailed a fix to the owner within a week. That's not only goodwill, it's good business.

Antic software support includes product support. When you buy an Antic product, you join a big family. Your program is not an orphan. It has a whole group of friends in The Catalog—compatible products that expand and enhance its power. And you can be sure that more are on the way.

Antic proudly supports adult vocational programs.

arc
A United Way Member Agency

Who needs an AMIGA?

SPECTRUM 512™

The Omni-color Paint Program

by Trio Engineering

"Ellen" by Darrel Anderson

SPECTRUM 512 is the paint program you've wanted since you bought your ST. It gives you 512 colors to be creative with. *All at the same time.*

When we first saw this program, we couldn't believe our eyes. But there it was — a rock-solid, low-resolution screen displaying rich colors composed of a chock-full palette of 512 colors. No flicker, no faking, no fooling. We couldn't stop playing with it.

512 colors means a lot more than just bright rainbows. Perceived resolution is increased *threefold.* Anti-aliasing replaces staircase zags — even in your old pictures. And the anti-aliased line mode creates an automatic, no-zag, french curve — smooth as a baby's bottom. Subtle shading and highlighting effects become possible for the first time, automatically.

48 Colors per Scan Line

The standard way to put more than 16 colors on the Atari ST screen is through "raster interrupts" — color registers are changed with each scan line. But this gives you only 16 colors each scan line, and this limited color arrangement causes "banding," where horizontal bands of similar colors streak across your picture. Pretty restrictive.

SPECTRUM 512 gives you *48 colors per scan line!* And you don't have to stop to think about it because SPECTRUM 512 does it for you. Just pick any one of 512 colors and draw. If your chosen color exceeds the 48-color limit on any scan line, SPECTRUM 512 automatically adjusts the entire scan line of colors for a "best fit" — on the fly! The end result is, for all intents and purposes, you can place 512 colors anywhere on the screen!

How did they do it? The SPECTRUM 512 engineers hooked an oscilloscope to the Atari ST MMU chip and reverse-engineered its timers. Using this information, they designed a brilliant method to manipulate those timers and stuff more colors into extra simulated bit planes, before the signal even gets to the video shifter chip!

The SPECTRUM 512 work screen, including the user-defined palette

We sent SPECTRUM 512 to professional artist Darrel Anderson. As you can see from these pages, he went wild. Imagine what SPECTRUM 512 can add to *your* CAD-3D, DEGAS or NeoChrome pictures! No question, if you use a color monitor and have any interest in graphics, you will love SPECTRUM 512.

Look at all these tools!

Drawing:

- Freehand "pen" drawing
- "Rubber line" and "French curve" mode (no jaggies)
- Polygon (no jaggies)
- Circle/ellipse (no jaggies)
- Fill—patterned or solid
- Fill New—fill over any existing patterns or colors!
- Patterns—20 predefined, 20 user-defined
- Brush
  - 38 brush shapes, solid or patterned
  - User definable brushes
  - Auto-align patterns, or pixel offset for overlap

ST Graphics

The DEGAS Bumblebee, before

and after SPECTRUM 512

- Airbrush—four sizes, nine flow speeds
- Undo buffer erases mistakes

Anti-aliasing:

- Zag-Out—Anti-aliasing DEGAS/Neo pics for smooth edges
  - Full screen
  - Local box
  - Brush
- Blur—Adjustable neighboring pixel averaging
  - Full screen
  - Local box
  - Brush
- No Zag—Anti-aliasing and auto-curve for:
  - Lines
  - Polygons
  - Circles

Colors:

- Select colors from:
  - 512-color system palette
  - 1 to 192-color user-defined palette, or
  - Any color on screen
- Save and load custom palettes
- Fixed or floating color menus for auto-color adjustment
- Change last painted color to any of 512

Works with all ST paint programs, plus CAD-3D 1.0 (ST0214) and CYBER STUDIO (ST0236).

New!

"Laserbee" by Darrel Anderson

- Auto-create smooth color ranges between any two or more colors
- Color cycle paint flow through any range of colors:
  - Brush (solid or patterned)
  - Airbrush
- Fantastic color edit mode includes:
  - Search and replace one color with another
  - Search and replace several colors with several others
  - Add or subtract red, green, or blue values of one or more colors
  - Increase or decrease luminence of one or more colors
  - Perform any of the above functions globally (full screen), or locally with cursor control
- Magnify window for all functions
- 12-screen (1-meg) scrollable cut & paste buffer
- 4-way flip, and scale
- Programmable slide-show program to display your SPECTRUM 512 art

- Detailed manual includes advanced screen photography techniques
- Load IFF Amiga pics

Public Domain SPECTRUM 512 pics!
The pictures on this page, plus *many more*, by Darrel Anderson and Richard Berry, are available for only $12.00 on the SPECTRUM 512 SLIDE SHOW DISK (PD9100). See our ST PUBLIC DOMAIN LIBRARY on page 20.

SPECTRUM 512
ST0249 $69.95
REQUIRES: Color monitor. 520ST's built before 12/85 may require $30 MMU chip upgrade from auth. serv. center.
DEGAS™ Electronic Arts
NeoChrome™ Atari Corp.

Monday-Friday MasterCard, VISA Only
All 50 states 6AM-6PM PACIFIC TIME

"Antic's CAD-3D is one of the best programs I've seen for the Atari or anything else."
— Jerry Pournelle **Byte Magazine**

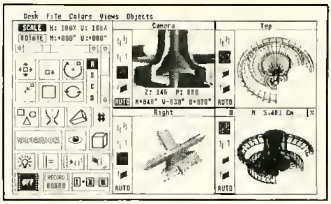
THE CYBER STUDIO™
Featuring CAD-3D 2.0

Works with all ST paint programs, and the CYBER family.

Tom Hudson's STEREO CAD-3D 2.0™
Hidden within your Atari ST is a professional 3D workstation. A 3D design system that is intuitive — yet powerful enough for professional artists, advertising agencies, or design firms.

Design and *walk through* your dream house with CAD-3D 2.0. Programmers use our system for dimensional tasks like flight-simulator scenic design; artists create accurate perspective foundations for their DEGAS or NeoChrome pictures; engineers find CAD-3D 2.0 the perfect sketchpad for conceptual design; and VCR owners use the CYBER STUDIO to create 3D titles and cartoons for home videos.

We made version 2.0 an open-architecture system, so that any programmer can easily write custom applications for CAD-3D 2.0 that run as desk accessories: motion control choreography (CYBER CONTROL-ST0250), advanced rendering/ray tracing, finite element analysis, texture mapping, custom modeling tools... There's no limit. CAD-3D 2.0 will *never* become obsolete.



Let your creativity soar with all these new features:
- Icon control panel — fast, intuitive interface
- All new, DEGAS-style color design system permits custom-color lines, edges and backgrounds, plus multi-colored objects
- *Real-time* display mode for instant response (uses 3D math developed by Jez San for Starglider)
- Supports (optional) STEREOTEK 3D glasses (TH9020) for 3D viewing
- Dimensioning (feet/inches or meters/centimeters)
- Graphic lighting control — drag lights anywhere
- GDOS output supports laser and dot matrix printers
- Compatible with Generic CADD 2.0 from Generic Software
- User-selectable pivot points for articulated rotations
- Enhanced Spin, Extrude, and Join tools
- Load DEGAS pics into CAD-3D background

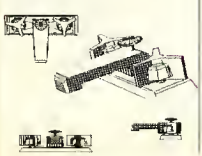
Mark Kimball's CYBERMATE™
The CAD-3D Animation/Editing language
CYBERMATE is a "post-production" animation editing language that gives you control over:
- Sequence looping, cuts, fades & dissolves
- Color cycling animation
- Sound effects (created with the G.I.S.T. editor, on pg. 19)
- Title generation and text display

CYBERMATE features editing power plus full programmability. At your fingertips is the most efficient real-time playback system for 3D graphics on any microcomputer. And it's fast! Up to 60 frames-per-second.

CYBERMATE transforms your one-meg ST into a TEN-MEGABYTE frame buffer. And because it's a real programming language, CYBERMATE can adapt to new technologies, like the new digital video tape recorders from Japan, RGB-to-NTSC converters, MIDI, and SMPTE time code.

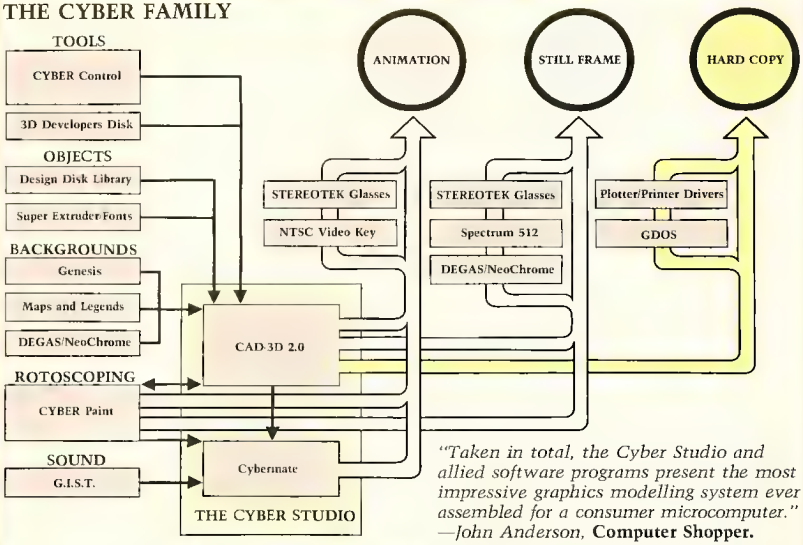
THE CYBER STUDIO
STEREO CAD-3D 2.0 plus CYBERMATE
(2-disk set)
ST0236 $89.95
REQUIRES: one-megabyte RAM
Upgrade from CAD-3D 1.0 for only $60 (plus original disk and $5 shipping)
Starglider™ Firebird Software
DEGAS™ Batteries Included
Generic CADD 2.0™ Generic Software

The Original...
Tom Hudson's CAD-3D™ 1.0
520ST-compatible



"A remarkably powerful modeling system."
Computer Graphics World
If you own a 520ST and are interested in computer graphics, many of the features of CAD-3D 2.0 are included in this original version—even a basic animation system.
CAD-3D 1.0
ST0214 ~~$79.95~~
REQUIRES: 512K RAM
Now! $29.95

THE CYBER FAMILY



"Taken in total, the Cyber Studio and allied software programs present the most impressive graphics modelling system ever assembled for a consumer microcomputer." —*John Anderson,* **Computer Shopper.**

So many products are being added to the ever-expanding CYBER FAMILY, we drew a flow chart to help you understand how they work together.

Here's a typical use of the CYBER FAMILY, which you can follow using the flow chart: Using CYBER CONTROL, you write a program to control several unique cameras in CAD-3D 2.0 for an animation sequence which uses skeletons from the HUMAN DESIGN DISK, being assembled in front of a molecular background provided by GENESIS. Your completed animation may be immediately viewed from CAD-3D 2.0 without even firing up CYBERMATE. And then, you may want to touch up some of the frames with CYBER PAINT — perhaps add some tweened Aegis Animator sequences. This time you check out your new animation directly from CYBER PAINT. If you want to add some wild G.I.S.T. sound effects, and eye-catching color cycling, the editing program, CYBERMATE, comes into play. Finally, you send the resulting, real-time animation straight out your 1-meg 520ST into your VCR, splicing it into your 45 minute budget presentation to, say, the National Science Foundation. And you did it for less than a tenth the cost of any other 3D animation system.

ORDER TOLL FREE (800)234-7001
800
Monday-Friday MasterCard, VISA Only
All 50 states 6AM-6PM PACIFIC TIME

Online CYBER CONNECTION

To back up our growing CYBER family of products, we've begun an online feedback service on CompuServe. It's called the CYBER CONNECTION, and includes the latest CYBER STUDIO animation demos, upgrades, public domain premieres, and more. Much of the new material posted here will not be available anyplace else. Send messages directly to the authors like Tom Hudson and Mark Kimball. And check out their replies as they respond to other users. CYBER CONNECTION includes hints, tips, and suggestions from the best.

The CYBER CONNECTION is easy to find: At the CompuServe prompt, type *GO ANTIC.* When the first menu appears, select *Online Cyber Connection,* and you're in!

Composite Video Cables
For those of you who own a 1-meg 520ST with composite outputs, Practical Solutions sells a special monitor cable ($15) that has composite video jacks which avoid the noisy (and VCR-incompatible) RF signal output.

NOTE: Those with 1040STs will soon be able to use The Video Key, an RGB-to-composite converter with a much higher quality NTSC signal, available from Practical Solutions (602-884-9612).

CYBER CONTROL™

New!

The CAD-3D Motion Control Language

by Tom Hudson

STEREOGRAPHICS OPTIONAL

Works with CYBER STUDIO

Tom's latest brainstorm: CYBER CONTROL, The CAD-3D Motion Control Language—a desk accessory programming language, with built-in GEM text editor. When you want to simulate a real event with articulated life-like animation, plug in to CYBER CONTROL.

CYBER CONTROL is an animation scripting language that locks in to CAD 3-D 2.0, controls all of its functions, and magnifies its already powerful capabilities. Whether you're a hobbyist or a scientist, you can create animated 3D models in a single afternoon. Simulate particle physics; 3D animation for entertainment or education; 3D financial analysis; animated, fully dimensional math models; event reconstruction of P.I. litigation; human factors engineering. . . you name it!

Now, you can write code to control any feature of CAD-3D 2.0—plus powerful new features not in CAD-3D 2.0! With the new *hierarchical control*, you can create graceful birds with wings of many pieces, soaring in beautiful harmony. Or a complex clockwork mechanism of linked parts, moving in offbeat syncopation. . . . But we'll let Tom describe his newest baby:

As CAD-3D 2.0 grew into a powerful animation system, I realized that truly complex animations would require a scripting language for proper control. I purposely designed CYBER CONTROL as a BASIC-like language so anyone could pick it up quickly.

When activated in CAD-3D 2.0, CYBER CONTROL takes over full control of all functions, creating and manipulating objects and cameras (yes, three different ones). Its primary use is as a cinematic motion-control script language, but its flexible nature makes it an ideal "front-end" for CAD-3D so you can write your own BASIC-like programs that use CAD-3D as a "graphic engine!"

Language features include:

- FOR/NEXT for full Loop control; Conditional IF/THEN; GOSUB/RETURN.
- Labels instead of line numbers
- Numeric expression handling; *floating point*; logical AND and OR; parenthesized expressions; function library including sine, cosine, tangent, square root, and more!
- Up to 128 user-defined, alphanumeric variables, significant to 8 characters! Hardcopy Print statement for debugging.

Other features include:

- Two new cameras! Now, move your camera *anywhere* in the CAD-3D universe — fly *through* your scenes!
- Real-time animation preview mode!
- Hierarchical Connectivity. Attach objects to each other for fluid, connected movement — walking skeletons, or hinged mechanisms.
- Smooth 3D splines:
  - Move cameras along realistic flight paths
  - Apply natural movement to articulated models
  - Build new types of models (coils, fractals, etc.)
- Layer foreground and background images for cel animation.

I hope you enjoy CYBER CONTROL. Your ST can automatically *create animations that would take you* days *to complete — in a matter of hours. Start the program and walk away, as your computer does all the work!*

— Tom Hudson

CYBER CONTROL
ST0250 $59.95
REQUIRES: CYBER STUDIO
Recommended: CAD-3D version 2.0 2
CAD-3D 2.02 is available **only** in The Catalog's CYBER STUDIO package (ST0236), which also includes CYBERMATE.

HOLOGRAM CONTEST!

You can win a CAD-3D hologram signed by Tom Hudson! What's that? A CAD-3D hologram?

That's right! Using a revolutionary new production process, Advanced Dimensional Displays, Inc. has developed reflective, laser disk holograms that *float* holographic images above the disk! (Like an inanimate version of: "Help me Obi-wan Kenobi. . . .") And this incredible new process uses CAD-3D images as objects!

The three best monoscopic *and* stereoscopic animations (six total), designed using CYBER CONTROL, will earn their respective authors a five-inch hologram, generated by CAD-3D and autographed by Tom Hudson. Contest deadline is midnight, January 31, 1988.

Note: This contest is only available to registered CYBER CONTROL owners. Limited to one entry per owner, and you must include the contest entry blank enclosed in the CYBER CONTROL package.

Monday-Friday MasterCard, VISA Only
All 50 states 6AM-6PM PACIFIC TIME

CYBER PAINT™
Pro Animation Studio
by Jim Kent

Sometimes 3D animation just isn't enough. The classic Disney animations were painted, cel by cel, in a flowing, two-dimensional brilliance of color. Some of the best animation is still created this way. Thus, CYBER PAINT.

CYBER PAINT is a frame-by-frame animation/paint program with a lot of extras. You can use it by itself to create 2D animated fantasies, or...

...load in a three-dimensional CYBER STUDIO animation and add classic animation flourishes.

Say you've just created a CYBER STUDIO animation of a rocket launch, and it looks great — a realistically shaded 3D space vehicle lifting off. But now you want to add flickering exhaust flames, smoke, and some alien trees waving in the breeze. CYBER PAINT lets you do it fast. And it's fun!

Designed by Jim Kent, author of Aegis Animator, CYBER PAINT lets you touch up individual frames, or add smooth, tweening effects — automatically — to any range of frames. And, with CYBER PAINT, you can *merge your Aegis Animator animations* directly into the 3D CYBER Universe!

And, since CYBER STUDIO isn't required, you can use CYBER PAINT as a stand-alone 2D animation/paint system. The possibilities are limitless.

3 frames of CYBER STUDIO animation before CYBER PAINT

The same 3 frames after a CYBER PAINT touch-up

Works with all ST paint programs, plus CYBER STUDIO (ST0236), and AEGIS ANIMATOR.

New!

Just a few of CYBER PAINT'S many features:

- Automatic mode for cel registration
- ADO-style special efx
- Fly animations on multiple axes or paths
- Real-time "scratch video"
- Cut & Paste, Stretch, Flip & Rotate
- *Overlay* or *underlay* entire animation files, portions, or single pics.
- Multiple brushes + Airbrush & Stipple
- Pen, Line, Polygon, Circle, and Box
- Tweening operations on selected areas
- Time menu for global or local tweening
- Flood fill and Color Separation
- Real-time Magnify, active at any time
- Color Cycle, Tint, Inverse, Change
- Intuitive mouse or keyboard control

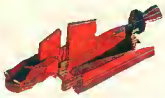
CYBER PAINT
ST0251 $69.95
REQUIRES: One-megabyte RAM & color monitor
Aegis Animator™ Aegis Development
DEGAS™ Electronic Arts
NeoChrome™ Atari Corp.

CYBERSCAPE™
A 3-D "feature film" on disk
by Darrel Anderson

Skim the fantastic, 3-dimensional terrain of the mind! Metamorphosing metallatons and transforming tubular time slots! This full-color, animated feature was created by *professional*

artist Darrel Anderson, to show what can be done with CYBER STUDIO (ST0236). An incredible **tour de force** of computer graphic power, this demo is a guaranteed auto-lobotomy of the very first order!

CYBERSCAPE DS
(1 double-sided disk)
SB0104 $10.00
REQUIRES: Double-sided drive and 1 megabyte RAM



FUTURE DESIGN DISK™

by Darrel Anderson

Get a fast start on your three-dimensional explorations with the CAD-3D FUTURE DESIGN DISK. Everything you need to create **spacecraft, stations, bases, vehicles, robots,** and **androids**. Model your future then populate it with androids and CAD-People. Bring it to life with CYBERMATE, detail it with any popular paint program. Includes:

- Blueprints
- Complete models
- Component parts
- Construction tips

FUTURE DESIGN DISK
ST0232 $29.95
REQUIRES: CAD-3D 1.0, or CYBER STUDIO

HUMAN DESIGN DISK™

by Richard Berry

Populate the CAD-3D Universe. Bring to life your CAD-3D creations with the CAD-3D HUMAN DESIGN DISK. Complete modular male and female prototypes, in skeletal anatomy forms, are included. Complex

head and hand details add realism to your figures. Modify your figures to create the infinite variety of the human form, pose your figures, detail the images with any popular paint program, or bring them to life with the CYBERMATE Animation System. Includes:

- Blueprints
- Tips on the dynamics of human anatomy.

HUMAN DESIGN DISK
ST0242 $29.95
REQUIRES: CAD-3D 1.0, or CYBER STUDIO

ARCHITECTURAL DESIGN DISK™

by Darrel Anderson

Create CAD-3D renderings of your Dream House or build an entire CAD-3D City from the ground up. Component parts including: Doors, Windows, Arches, Roofs, Walls, Stairways, and a wide variety of architectural accoutrements. Create your own CAD structures and populate them with HUMAN DESIGN figures. Build "sets" for your CYBERMATE animated movies.

NOTE: The ARCHITECTURAL DESIGN DISK can be used to visualize and render real world architecture. It is not intended for use as an architectural engineering tool. Includes:

- Blueprints
- Complete models
- Design tips

ARCHITECTURAL DESIGN DISK
ST0243 $29.95
REQUIRES: CAD-3D 1.0, or CYBER STUDIO

Now you can write the next hit 3D program!

3D DEVELOPER'S DISK

For CYBER STUDIO

by Tom Hudson

Works with most popular ST C's plus machine language

While Tom was rewriting CAD-3D, he quickly realized that it was impossible to add *everything* and still release a product in this century. Plus, who wanted CAD software that required a 4 megabyte machine? So he opened up the system—by providing a programmer's 'pipeline' through desk accessories.

Opportunity Knocks!

The 3D DEVELOPERS DISK clearly explains to programmers and developers how to access the pipeline. Included on the disk are full-featured source and object code examples, plus detailed instructions by Tom Hudson showing you how to hook into CYBER STUDIO. Create your own 3D applications—with no knowledge of 3D math. There's no licensing fee required.

3D DEVELOPER'S DISK
ST0244 $29.95
REQUIRES: CYBER STUDIO

3D-FONT PACKAGE™

by Tom Hudson

Works with CAD-3D 1.0 and CYBER STUDIO

Design your own 3D greeting cards, signs, logos, and letterheads with CAD-3D. Over 250K of serif and sans-serif letters. At the heart of this *packed* disk is Tom Hudson's *Super Extruder Tool,* which doubles as a 3D Font Editor. With it, you can create new kinds of complex, *multicolored 3D objects* (such as those seen in the 3D DESIGN DISKS) that can't be built with CAD-3D alone.

3D-FONT PACKAGE
ST0224 $24.95
REQUIRES: CAD-3D 1.0, or CYBER STUDIO

3D PLOTTER & PRINTER DRIVERS™

Supports Hewlett-Packard pen plotters (and compatibles); plus Gemini/Star, Epson, Okidata, IBM, Color, NEC, Panasonic, C-Itoh dot-matrix printers.

PLOTTER DRIVERS
ST0225 $24.95
REQUIRES: CAD-3D 1.0, or CYBER STUDIO

True stereoscopic 3D graphics for your Atari ST

STEREOTEK™ 3D GLASSES

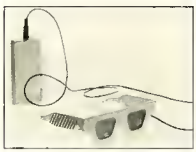
by LC Technologies

©Michel Tcherevkoff '18 West

Put on the STEREOTEK glasses and jump into a new universe. Discover a magical world that you always knew existed. That *extra* dimension—depth. Now you can add depth to your computer graphics with STEREOTEK Liquid Crystal glasses. Solid, realistic, 3D images you want to reach out and touch. STEREOTEK glasses plug into your Atari ST cartridge port to provide absolutely realistic 3D graphics in full color or high-res monochrome. Your STEREOTEK depth-view system includes:

- One pair electronic Liquid Crystal Shutter glasses with six-foot cable (can be comfortably worn over eyeglasses)
- ST cartridge interface unit—supports six sets of glasses (additional sets optional)
- DEGAS Elite Stereo Desk Accessory
- Stereo CAD-3D animation and stereo slide show by Tom Hudson
- For programmers: Complete developer's instructions plus source code for adding stereo to your own programs (C or GFA BASIC)

The secret to full-color stereo images on a computer screen is electronic Liquid Crystal Shutter (LCS) glasses. Two optical shutters in eyeglass frames are connected electronically to the ST. Every time the ST screen refreshes (60hz/color, 70hz/mono), one shutter closes and the other opens.



The monitor displays alternating right and left eye views synchronized with the shutters. The alternating views appear faster than the eye can see, and your brain translates the normally flat monitor image into one of startlingly realistic depth.

STEREOTEK 3D SYSTEM
TH9020 $149.95
ADD-ON GLASSES ONLY
TH9021 $99.95
Satisfaction guaranteed or your Money Back! (during 30-day warranty period)

LC Technologies is a venture of Tektronix, Inc.

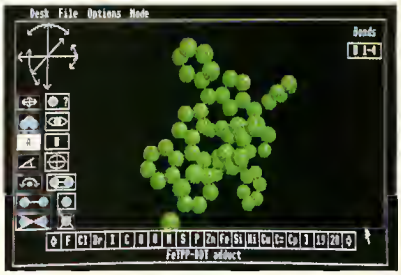
ORDER TOLL FREE (800)234-7001

800

Monday-Friday MasterCard, VISA Only
All 50 states 6AM-6PM PACIFIC TIME

GENESIS™
The 3D Molecular Modeler

by Scott Legrand



The atoms of life: carbon... nitrogen... hydrogen... oxygen... phosphorus...

This is the stuff we're made of. But until now, only research scientists in large universities could actually *image* the building blocks of matter.

Imagine creating the basic elements yourself, then watching as they come to life. And with a pair of STEREOTEK glasses, this miraculous process unfolds in 3D stereoscopic depth.

Using GENESIS and your mouse, you can:

- load and display amino acids, hydrocarbons, and sugars
- create your own molecules onscreen or build them with data from pre-stored libraries
- Explore X-ray Crystallography

Rotate 3D molecules on any axis — X, Y, or Z, using real-time control. In *stereo*, hexagonal carbon rings and delicate fingers of hydrogen burst right out of your monitor.

With two molecules onscreen, you may:

- create your own rules for molecular bonding, then animate the chemical reaction between them
- derive the new empirical formula and print hardcopy data for reference

GENESIS offers the same type of iconic control panel and intuitive human interface pioneered on the Atari ST with CYBER STUDIO (ST0236). Three different display modes for every imaging need:

1) STEREOTEK LCS glasses (TH9020)
2) Red/blue anaglyphic glasses
3) No-glasses (monoscopic)

And with data provided on the program disk, you can create virtually any known molecule using the on-line periodic table of elements.

GENESIS
ST0239 $79.95
REQUIRES: One-megabyte RAM

Now available for use with StereoTek Glasses

LCS WANDERER™

Deep space has never been so real!

by Pyramide Software

LCS WANDERER is the first ST game designed for full-depth stereo. Written in France, but set in outer space, this stunning arcade adventure transports you through galactic Space sectors, Black holes, and Limbo. Startlingly realistic, stereo point-of-view animation puts you in the cockpit as you swoop and dive through star fields while dodging enemy aircraft.

This is no ordinary space shoot-em-up. The bizarre, complex plot involves the ruthless kidnapping of every cat on earth. As you wander though space, collecting purloined pussycats, you run across the Heads of State of the Planetary sectors with whom you must play interstellar poker. LCS WANDERER is a complex, multimodular program—really several games in one. Journey from the dogfights in the Space sectors to the interstellar poker strategies, from the Battlezone-style of the Planetary sectors to the stereo tunnel of the Black holes, and Limbo...well, there's always Limbo.

The liquid crystal clarity of the StereoTek glasses transforms LCS WANDERER into a multi-colored micro universe within your monitor. Includes a completely redesigned solid-surface cockpit, full 16-color displays, and reduced eye fatigue compared to the original red/blue version.

LCS WANDERER
ST0238 $39.95
REQUIRES: Color monitor and StereoTek Glasses
Battlezone™ Atari Corp.

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800
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$5,000 CONTEST

Antic and LC Technologies are co-sponsoring a competition to search for the **most innovative stereo application program.** We're going to pay $5,000 in cash (advance against royalties) for the winner, plus a continuing royalty upon publication here in The Catalog.

For an official entry blank and competition details, write to:
STEREO COMPETITION,
The Catalog,
544 Second Street,
San Francisco, CA 94107,
or call (415) 957-0886.

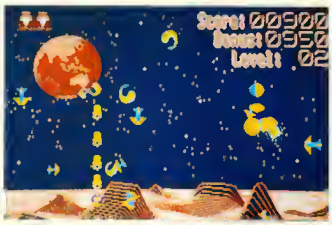
A new perspective in Arcade Action!

SHOOT THE MOON™

3D Alien Invaders

by Mountain Fresh Software

New!



You've been in worse fixes — but you can't remember when. Aliens! Floating down from the sky, dropping bombs. And not just overhead ...and not just to the right...and not just to the left...but *way down back there*, and *right up front here!*

Fortuitously, your three years of *depth* indoctrination at the Leadership Cadet Spaceways (LCS) institute has handily prepared you for exactly this kind of vile, humanity-threatening situation. With the LCS STEREOTEK glasses (TH9020) firmly affixed to your face, you correctly perceive the precise Z-space location of each ugly little alien beastie, manipulate your Kronos-Smithfield servo-remote laser tractor beneath the erratically twitching horror, and blow the abhorrent critter out of the sky. But, no time to enjoy the view, Depth Cadet! There's plenty more space nasties where that thing came from. And, if you clear this sky, it's on to another world — where the monsters get smarter.

SHOOT THE MOON is a colorful, high-speed shoot-em-up in the classic arcade tradition, with fabulous animation, original sounds, and one big difference — *stereo*. The floating aliens menace you from multi-depth levels as you maneuver your ship beneath them, find the right depth level, and pulverize them.

Beyond the sheer entertainment value of SHOOT THE MOON, we've found stereo games to be excellent training tools for children requiring ocular muscular excercise, or training in depth perception.

And, for those who want their traditional arcade games to remain completely traditional, you can play SHOOT THE MOON in 2D without the glasses. The game play is just different enough to make it a whole new challenge. Master the double-dimension version before moving on to the STEREOTEK universe, or, if you already have STEREOTEK glasses, master both versions.

SHOOT THE MOON
ST0252 $39.95

The world on a disk. Maps for everybody!

MAPS AND LEGENDS™ The Cartographer

STEREO OPTIONAL

Enhanced Version

by Harry Koons and David Chenette

Hold on a second. Now that you've word-processed, spreadsheeted, databased and telecommunicated with your Atari ST, aren't you looking for **something different?**

How about Cartography? Until now, mapmaking has been a unique art mastered by only a few talented people. With MAPS AND LEGENDS, your Atari ST becomes a personal desktop cartography system.

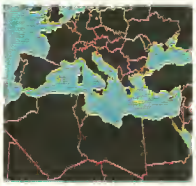
Show your children exactly what the world looks like—with or without political boundaries. And in STEREO, the world globes appear to be floating *in front* of your monitor. Or print an impressive custom map to go with your travel itinerary. We use MAPS AND LEGENDS all the time at the office for sales and marketing maps. And since it's based on the GEM interface, it's GEM-easy to use!

MAPS AND LEGENDS 3.0
ST0202 $34.95
(upgrade is $15)

LET'S GET TECHNICAL
Packed with features, including: Stereo Compatibility, Built-in 9000-Coordinate Database, 11 Different Map Perspectives, Plotting from any altitude, Works in all 3 screen modes, Built-in Paint System (and compatible with DEGAS and NEO), Multi-font Labeller, Custom Overlay Plotter (create your own maps—build your own map databases), Auto-locate Mode (reads coordinates, distance and bearing from maps) and so many more that we don't have room to list them all.

DATAMAP COLLECTION™

Expand Your Maps and Legends Database!



NATIONAL POLITICAL BOUNDARIES
Europe, Latin America, S. America, Asia, Africa

PROVINCIAL BOUNDARIES
Australia, Canada, China, U.S.S.R.

PLUS HISTORICAL MAPS AND MORE!

DATAMAPS
ST0227 $24.95
REQUIRES: MAPS AND LEGENDS 2.0 or greater

Now! A professional flight planner for the ST!

THE NAVIGATOR™

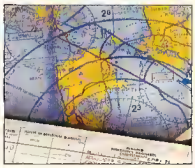
by Scott D. Stephenson Works with MAPS AND LEGENDS

Sometimes, you really need to know *exactly* where you're going. Have you ever wondered, while boarding your plane, how the pilot will find his way to your destination? The answer is navigation. The pilot follows a detailed flight plan created by his navigator.

Now, accurate computerized navigational planning is available on the Atari ST. THE NAVIGATOR is a professional, automated flight planner created specifically for the ST by professional navigator Scott D. Stephenson. Private pilots, military pilots, navigators (ocean-going as well as air), and commercial operators can use this amazing program to create accurate, detailed flight plans.

Amateurs, arm-chair flyers, teachers and students of navigational theory can discover how the professional navigator plans his flight, compensates for wind direction, establishes waypoints, and calculates times and distances. And we've included a special MAPS AND LEGENDS overlay function which creates custom map overlays, graphically displaying your flight paths.

- **Private Pilots:** You'll love THE NAVIGATOR'S printed flight plan and extensive ICAO waypoint database.
- **Armchair Pilots:** Generate your own flight plans for subLogic's FLIGHT SIMULATOR.
- **Teachers:** Show your students the rudiments of navigation. Use THE NAVIGATOR plus MAPS AND LEGENDS to measure the earth!
- **Sailors:** Plan for currents or winds—taking fuel flows and times into consideration.
- THE NAVIGATOR comes complete with these databases: European ICAO, Asian ICAO, and US ICAO.



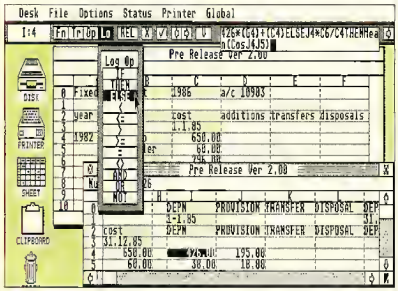
2 PROGRAMS IN 1!
Included with THE NAVIGATOR is THE NAVIGATION TOOLKIT, a bonus program of computer navigation tools which performs sophisticated data management operations on your waypoint databases. Create new data files or modify existing files using its advanced random-search technique.

THE NAVIGATOR
ST0245 $49.95

Byte tests show A-Calc almost *twice* as fast as Microsoft Multiplan on the Mac Plus!

A-CALC PRIME™

by Kuma Computers, Ltd. UK



That's right! In the February 1987 review of the Atari 1040 ST, **Byte** magazine selected A-CALC 1.0 to test the Atari against the Amiga and the Macintosh Plus. On recalculation of a 25 x 25 cell spreadsheet, A-CALC was the clear winner at 4.7 seconds, compared to 7.5 on the Mac Plus, and 6.5 on the Amiga (using Lattice Unicalc).

And now, you can have all the speed of the original GEM-based spreadsheet plus the powerhouse features of the next generation: A-CALC PRIME—it blows away the competition.

Features that made the original A-CALC 1.0 the easiest-to-use spreadsheet ever:

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"This is the easiest to use spreadsheet that I've ever seen." —W. Krieger, **Computer Shopper Magazine**

- Up to five windows open at once
- WIDE VIEW option to see 50 percent more of your worksheet at once
- SEARCH for character strings
- Powerful PRINTER FORMATTING commands
- .DIF file compatibility
- Exclusive A-CHART compatibility
- Sparse-matrix design maximizes available RAM

And now, PRIME adds dozens of special features:

- Row and column lock
- Conditional expressions (IF, THEN, ELSE, etc.)
- MACROS
- Labels
- 8192 rows x 256 columns
- Color/pattern coding of formula, text, value, etc.
- SORT and FIND
- Trig functions
- **Sideways** printing (for Epson FX 80)
- High-speed SMOOTH updating
- Complete printer control from **within** the spreadsheet
- Password-protected cells (hide and unhide)
- Additional ease-of-use features:
  - **Off-screen** scrolling with the mouse
  - **Out-of-the-way** convenient edit window
  - Cell and range reference by **pointing with the mouse** (even reference cells in inactive windows!)
  - **Ten** clipboards
  - Illustrated manual and on-disk examples

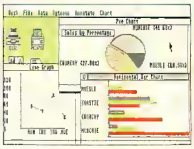
In short, PRIME gives you premium spreadsheet power for the rock-bottom price of $59.95. And, for A-CALC 1.0 owners, the upgrade is only $20.00 (plus $5.00 shipping. Enclose your original ver. 1 disk).

A-CALC PRIME
ST0235 $59.95

Make your next presentation the one they remember.

A-CHART™

by Kuma Computers, Ltd. UK



A-Chart

When was the last time you were excited about your spreadsheet? A-CHART makes working with figures **fun and intuitive.**

A-CHART automatically turns your A-CALC (or A-CALC PRIME) spreadsheets into beautiful graphs that are DEGAS-compatible. And, if you don't have a spreadsheet, A-CHART's **built-in editor** will help you organize those numbers into a super-sharp presentation.

View your data in **eight different chart styles**—change styles instantly with one mouse click. **Drag and size multiple charts** in each window, **define your own fill patterns and line styles.** The flexibility of the graphic presentation of your numbers will give you **an entirely new perspective on your business or home budget.** And A-CHART grows as you do, with the capability of storing up to 50,000 data points in a 512K machine and 150,000 datapoint in a 1 meg machine. **Full statistics menu** for detailed analysis includes Mean, Median, Variance, Standard Deviation, Skewness, T-test, F-test, and much more.

A-CHART
ST0230 $39.95

Epson Compatible Printer from A-CHART
Multi-printer compatible from DEGAS

Degas Enhanced

File Compatible with BASE-TWO, PHA$AR and A-CALC PRIME

PHA$AR™

Professional Home Accounting System and Register

by Marksman Technology

PHA$AR: A friendly, GEM-based, single-entry accounting system that will make your life easier. PHA$AR is fast, sophisticated and contains the best interface programming design we've seen in any ST applications program.

IBM and Amiga users say: "The first home accounting package I have found in five years that is actually usable." — **Mark Baldwin, Littleton, CO**

"I am enjoying your tutorial almost as much as I admire the power and versatility of the software itself." — **Joe Joyce, Huntington, VT**

PHA$AR is the standard by which other financial packages will be measured

GENERAL FEATURES
- 130 expense/income categories
- 40 accounts (VISA, checking, etc.)
- Up to 500 transactions per month
- Custom check printing
- A.I. parser predicts input, minimizes typing
- Instant help messages with right mouse button
- Relational design integrates financial data

TRANSACTIONS
- Automatic transfers between accounts
- Split-category transactions
- Create transaction macros for repetitive entries
- Point-and-type spreadsheet-style relational summary update

FINANCIAL ANALYSIS
- Easy budget setup and maintenance
- Analyze loan/savings plan
- Display multiple loans simultaneously for easy comparison

RECONCILIATION
- Display outstanding transactions for any account
- Confirm transactions with a single keystroke

REPORTS
- Clearly formatted printed reports include:
  - Account Summaries
  - Category Summaries
  - Net Worth Statement
  - Tax Calculations
  - And more...
- Display or print total income/expenses, monthly or year-to-date
- Sort categories in any order
- Built in data graphing
- Compatible with A-CHART (ST0230)

DATE/ADDRESS ORGANIZER
- Store up to 250 names, addresses and phone numbers
- Integrated scheduler stores special occasions
- Display calendar with highlighted special occasions
- Optional auto-alert reminds you of important events

TAX
- Design your own tax forms—never out of date
- Calculate tax liability in less than one minute
- Project tax liability at any time

PHA$AR
ST0237 $89.95

BASE TWO™

The GEM Database by the Authors of DBMASTER ONE

The next step in databases!

by Dan Matejka and Stanley Crane

It's no fun re-learning your database commands every time you boot it up. And those simplistic "filecard" databases just don't have the power to do the job. Or, maybe you've just created your custom database, entered 5,000 records, and now you want to print a report. . . good luck. You need a degree in programming just to get some decently formatted hard copy.

Dan Matejka and Stanley Crane have eight combined years of experience writing databases on computers ranging from the IBM PC to the Apple Macintosh. And their databases range in complexity from the extremely powerful and complex IBM PC DB MASTER to the familiar, introductory DB MASTER ONE on the Atari ST. They've watched the ST database market grow—and they've spotted a gap: until now, ST databases have been either too simple, or too complex. Until now, ST owners were limited to easy-to-use, inflexible "mailing lists," or involved, programmable "throw-backs" to the CP/M or MS-DOS world. Until now, there was no intuitive, yet powerful database featuring an adaptable report generator. *Until now.*

BASE-TWO fills the gap. Entirely GEM-operated, DB MASTER ONE owners will find it familiar, yet far more powerful. Look over some of the features and see if it solves your problem:

INSTANTANEOUS SORTING!

size	number records	sort time
512K	5,000	5.1 sec
1 Meg	10,000	9.7 sec
2 Meg	20,000	19.2 sec
4 Meg	50,000	46.1 sec

Using a sample eight-field mailing list.

- Variable field types:
  - Implicit (default)
  - Alpha
  - Numeric
  - Date (calculable)
  - Formula
- Formula fields automatically calculate results from several fields in same record
- Adjustable numeric decimal placement
- Re-edit database at any time without losing data
- User-definable .DIF file creation for software compatibility (with A-CHART, for example)
- DB MASTER ONE conversion program
- On-line Help screens
- Optional mouse or keyboard control
- 64 character label length
- 100 fields per record
- Multi-level Search and Sort
- Totally RAM-based for instant action
- Format disks from within program

The intuitive BASE-TWO **Report generator** includes:

- Multi-line field word-wrap; screen and printer
- Completely adjustable label or column-format report
- Optional, automatic date, time and page numbering
- Print reports to screen, printer, or ASCII disk file for word-processor editing
- Optional subtotal printout
- Adjust number of records per page
- Double-line report headers
- Place "comment" text anywhere
- Customize with printer control codes
- "Soft" field borders for autofield truncation
- Single-sheet or continuous feed option
- Store 10 custom reports for each file
- Up to 100 unique fields per report

BASE TWO
ST0246 $59.95

DB MASTER ONE is a registered trademark of DB MASTER Associates.

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DON'T LET THIS HAPPEN TO YOU!

*"I ordered FLASH and got these funny purple things!" "Shipping and handling? **What** shipping and handling?" "Why did I get ST software! I wanted XL/XE software!" "My software was delivered **where**!"*
Sounds alarming, doesn't it! We don't want this to happen to you!
Take a moment to read the ordering information below,
so that we may ship you your order as fast and accurately as possible.
Thanks for ordering from The Catalog!

Lisa Wehrer
Manager, Customer Service
The Catalog

ORDERING INFORMATION

1. Check for any hardware requirements at the end of each product description (e.g., REQUIRES: one megabyte, color monitor, etc.).
2. Make sure the programs you are ordering are for your machine. The first three letters of the **Item Number** will tell you which machine each program is for.

FOR THE ATARI ST				FOR THE ATARI XL/XE		
ST0	PD9	SDS	SB0	AP0	PD0	ADS
TH9	BB9	ST9		TH0	BB0	

3. **$20.00 minimum order**, on all orders.

ORDER BY MAIL

1. Use the attached order form if possible. If you do not have one, please:
a. **Clearly print** you name, address and telephone number.
b. **List Quantity, Item Number,** name of item, price of item and total.
c. Add **correct amount for shipping and handling charge** (see below). California residents must add 6.5% sales tax on merchandise total (shipping and handling are not taxed).
d. Enclose **check, money order** or **credit card information.** We accept Mastercard and Visa only. Please indicate MasterCard or Visa, include account number and expiration date.
2. **No C.O.D.'s. Do not send cash.**
3. **Overseas Customers,** order by Visa, MasterCard, or check or International Money Order in U.S. funds drawn on a **U.S. bank only**. **No** wire transfers. **$40.00 minimum order.**

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WHEN TO CALL
Ordering by phone is quick and easy. If you call in the afternoon, you will get fewer busy signals. Orders are taken from 6am to 6pm **Pacific Time** Monday through Friday.

HOW TO ORDER

1. Have the **item number** ready for each item you wish to order.
2. Phone orders are payable by **Visa** or **MasterCard.** Please have your **account number** and **expiration date** handy.

CALL TOLL FREE

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Disks	Domestic	Foreign	Canada/Mexico
1-5	$3.00	$10.00 Air	$4.00
6-10	$6.00	$15.00 Air	$7.00
11 or more	$9.00	$20.00 Air	$10.00
Books	$3.00 per book	$10.00 per book Air	$3.00
Magazines	$1.00 each	$5.00 each	$1.00 each

For Order Inquiry and Technical Support, please call: (415)957-0886
Monday through Friday 8am to 4pm **Pacific Time** (closed for lunch 1pm-2pm)
Compuserve™ subscribers enter: GO ANTIC
We regret we are unable to accept technical support or order inquiry calls on our 800 number. The 800 number is for **orders only.**

Prices and availability subject to change without notice.

HOW TO ORDER

WANT TO SELL YOUR ST SOFTWARE?

HERE'S HOW:
We market a wider variety of software than anyone in the ST marketplace. Whether you're a first-timer, veteran, or a major software firm, we have a place for you in The Catalog. We also distribute through over 1,000 retailers. So, if you're looking for broad distribution and understanding support, send us your program and let us take a look. Worried about security? So are we. Just send us a description of your software and we'll arrange the necessary non-disclosure agreements.

THE CATALOG
Product Development Department
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San Francisco, CA 94107
(415)957-0886

BYTE *picks FLASH*
— Top Atari terminal program!
SALE 25% OFF

FLASH 1.5™

The Most Popular ST Terminal Program

by Joe Chiazzese and Alan Page

If you own a modem you should be using FLASH. Why? Because FLASH is the best. It will simplify your online time and make telecommunicating more enjoyable and less expensive.

And now, with version 1.5, FLASH just got a whole lot better — for a whole lot less (effectively $15 after subtracting the $15 CIS time). Check out the new features:

- Enhanced GEM Word Processor
  - Automatic, adjustable word wrap
  - Search and Replace
  - Reformat text blocks
- Supports CompuServe's B protocol for faster, more convenient file transfers (in addition to color Vidtex graphics).
- Now includes VT100/VT52 line-drawing character set
- New Script language functions
- Command line history
- Faster Type-ahead lets you scroll thru previous lines and resend them
- YMODEM batch file
- Ability to run other ST programs from inside FLASH

Ask Anyone

If you're looking for an ST terminal program, ask any online veteran about FLASH. FLASH is so GEM-intuitive, you feel right at home the first day you use it. Imagine turning on your ST, and with *one click* from the GEM desktop, beginning an online session on your favorite BBS. Watch FLASH dial the number, log on, and *automatically* browse through the most recent messages or files. Then, edit some email in the *built-in text editor*, and upload it right from the capture buffer, instantly! And FLASH is programmable, so you have total control for full customization.

"FLASH is my #1 choice on the Atari ST."
*— Ron Luks, Founder of CompuServe's SIG*ATARI and Atari Developer's Forum.*

LATE FLASH!!

Order now and get an *additional* $18 FREE GEnie time!

FLASH has a barrel-full of terminal emulation, so it's compatible with a wide range of mini or mainframe systems. And talk about bulletproof transfers! It's got the *most reliable XMODEM around!*

PACKED WITH FEATURES!

In addition to the new features, here are some of the original, solid standards. See for yourself why **Byte** magazine chose FLASH as the top Atari terminal program.

- Programmable "script" language (70 plus commands)
- Unlimited Macro keys
- Mainframe VT100 terminal emulation
- XMODEM (CRC), ASCII and DC2/DC4 file transfers
- Totally configurable to *your* needs!

FREE! Try FLASH now and get $15.00 of CompuServe access time.

FLASH 1.5
ST0220 ~~$49.95~~
Now!
Only $29.95

(* Free upgrade with original disk and $5.00 shipping.)

"FLASH is the fastest, most complete, most reliable terminal program I've used. . . ."
— M. Ratcliff,
ANALOG Magazine

BBS and Kermit Accessory for Flash!

REMOTE CONTROL ACCESSORY & KERMIT PROTOCOL™

by Joe Chiazzese and Alan Page

Instant Kermit protocol within Flash with this custom desk accessory. Plus Remote Control accessory turns Flash into a mini-BBS.

REMOTE/KERMIT
ST0226 $24.95
REQUIRES: FLASH ST022

Soup up your modem . . . in software!

QUICKTRAN™

The Modem Accelerator

by Adrian Jovanovich
Works with FLASH, or by itself.

Your 1200-baud modem can now transfer files at over 2000 baud. . . 2400 baud now flies at 4000 baud. . . The telephone company can't stop you. It's totally legal!

QUICKTRAN comes to you as two disks, each with an identical desk accessory. One QUICKTRAN accessory shrinks the file you're sending — in real time, using one of four automatic compression schemes. The second accessory — on the receiving end — expands the file to it's original size as it's coming in over the phone lines. Why spend hundreds on a faster modem when you can transfer files in almost half the time with QUICKTRAN?

QUICKTRAN
(2-disk set)
ST0247 $34.95

The program that created the sounds in CYBERSCAPE!

G.I.S.T.™
G.I. Sound Tool

by Lee Actor &
Gary Levenberg
for Synthetic Software

Works with C Compilers, CYBER STUDIO (ST0236), and Dr. T's MIDI Recording Studio

If **sound** has always fascinated you. . . or if you're a programmer or developer. . . take a look at G.I.S.T., the sound editor. G.I.S.T. was created to establish a standard of sound generation on the Atari ST that far surpasses the abilities of the built-in sound chip. G.I.S.T. is really two programs:
1) GEM-based editor
2) Sound Driver

As you can see from the screen display, the G.I.S.T. editor gives you real-time mouse control over any sound shape. The key to G.I.S.T.'s power is dynamic control of the GI chip. Each voice has three ADSR (envelope) controls and three LFO's (low frequency oscillators). You'll be creating sounds like a professional engineer—Near Synthesizer Quality (NSQ) sound.

For programmers, the Sound Driver is linkable object code that can be used in your own software. Adding superior sound effects to **any** program. . . it's interrupt driven, so it won't impact the speed of your software. In fact, it's already built into CYBER STUDIO—just one of many useful applications.

NOW! Compatible with GFA BASIC & PERSONAL PASCAL!

LET'S GET TECHNICAL

- Volume ADSR to shape attack, decay, sustain, release
- Volume LFO for Tremolo effects and AM (Amplitude Modulation)
- Frequency ADSR—frequency shifts up to ± 3 octaves!
- Frequency LFO for Vibrato effects and FM (Frequency Modulation)
- LFO delay lets you add effects at any point in the sound
- MIDI-compatible! Use your keyboard to play the GI chip
- Three sound windows may be open at once

Add sound effects to your CYBER STUDIO animations!

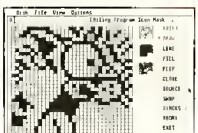
GFA BASIC™ Michtron Personal Pascal™ O.S.S.

G.I.S.T.
ST0233 $34.95

Start Icon Editor Hits "Big Time!"

P.I.E.
Professional Icon Editor

by Alex Leavens



It began as a hot little desk accessory in START, The ST Quarterly—you know, "Customize Your Desktop Icons!" or so the copy read. And it was a lot of fun. You could redesign your Trash Can to look like a paper shredder. But the programmer, Alex Leavens, just couldn't leave it alone. He kept *adding* things.

Now, the Desktop Icon Editor has graduated. P.I.E. is the *Professional* Icon Editor—for programmers as well as desktop artists. Alex has added icon code generation so you can now design icons for your own programs. And while he was at it, he added a bunch of graphics improvements to delight the artist in you.

New features include:

- Generates Resource Construction Set code for icon images; P.I.E. can be used from within the Resource Construction Set to create and edit icons for the resources you're currently working on!
- Improved Editing Features:
  - Faster Print and Line Modes
  - New Image Cut & Paste Functions
  - Selectable Fill Patterns
  - Nine-level Bi-directional Undo buffer
  - In-program Desktop Icon Preview mode
- Improved Keyboard Resource

P.I.E.
ST0248 $29.95

Monday-Friday MasterCard, VISA Only
All 50 states 6AM-6PM PACIFIC TIME

Add a world of DOS Icons to all of your GEM programs.

CRYSTAL™
(It makes GEM shine. . .)

by Jim Thompson

These are the DOS Icons Digital Research forgot when they wrote GEM. It's too bad Atari didn't put CRYSTAL into the TOS ROM's, because for about 30K of code, CRYSTAL gives TOS the most powerful features of MS-DOS. Plus, you never lose the look and feel of GEM. And since CRYSTAL is a desk accessory, it's always available.

In fact, these eight icons will eliminate all the frustration you feel from not having powerful DOS functions available from within your favorite GEM program (or the desktop). . .

Of course, CRYSTAL is compatible with all monitors, all disk drives, and all printers.

Make your favorite personal version of GEM shine—for $24.95.

CRYSTAL
ST0229 $24.95

"The best utility buy of the year, without a doubt."
— **Current Notes**

CAD-3D COLLECTION II

New!

More fantastic 3D objects! Includes the NEW TV STAR TREK ENTERPRISE; detailed Space Shuttle with working bay doors; Israeli Lavi Fighter; Advanced "F-24" Swept-Wing Fighter; complete Atari Logo; and Darrel Anderson's CYBERSCAPE DISKCRAFT!

PD9101 $12.00

REQUIRES: CAD-3D 1.0 or CYBER STUDIO

MISFIRE

New!

MISFIRE is by David Snyder, and it's the first user-submitted (1.5 minute long) CYBER STUDIO animation. MISFIRE is a frighteningly real scenario of a next decade SDI nightmare featuring multiple scenes and special effects. Who will survive? This disk is completely self-contained and needs no other program. Just boot it and amaze your friends.

PD9102 $12.00

REQUIRES: DS drive, 1-meg. RAM, and color system

SPELL/Writer's Tools

SPELL, written by Eric Bergman-Terell in Personal Pascal, is a simple spelling-checker for ASCII or 1st-Word files. It scans your document, reporting incorrect words and allowing you to add them to the program's unlimited-size dictionary.

PD9093 $12.00

ORDER TOLL FREE (800)234-7001

800

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TOM HUDSON'S PD3DCTL

New!

This is the early, public domain version of Tom's motion control language desk accessory for CAD-3D 2.0 — a subset of the powerful CYBER CONTROL (ST0250, elsewhere in The Catalog). Create your own programs to control CAD-3D 2.0 and automatically create CYBER STUDIO (ST0236) animations.

PD9095 $12.00

REQUIRES: CYBER STUDIO

DARREL ANDERSON'S SPACE PROBE

New!

This superb CYBER STUDIO (ST0236) animation demo with sound effects was created by Darrel Anderson, author of CYBERSCAPE (SB0104), for the Contact Aliens Lifeform PBS special. Complex space probe enters space in the foreground before diving to the distant planet's surface.

PD9096 $12.00

REQUIRES: One-megabyte RAM, DS drive, color

DARREL ANDERSON'S SPACE DOCK

New!

Another fabulous CYBER STUDIO (ST0236) animation demo by Darrel. This one features a deep-space hydro-wing launch from one of the Future Design craft.

PD9097 $12.00

REQUIRES: One-megabyte RAM & DS drive

TOM HUDSON'S STEREO STEELYBOINK

New!

STEREOTEK OPTIONAL

Incredible, animated ray-tracing demo by Tom Hudson shows off the amazing properties of the STEREOTEK glasses as reflective balls bounce in three-dimensional space.

PD9098 $12.00

REQUIRES: STEREOTEK GLASSES, one-megabyte RAM, DS drive, color

SPECTRUM 512 SLIDE SHOW

New!

Professional artists Darrel Anderson and Richard Berry contribute to this colorful collection of SPECTRUM 512 (ST0249) pictures. (Includes pictures from SPECTRUM Catalog ad.) Show your friends what the Atari ST is really capable of. Or, if you don't have SPECTRUM and want to see what it can do, we've included a special slide show program on this disk. *You don't need SPECTRUM to display these 512-color pictures.*

PD9100 $12.00

XLISP

XLisp, written by David Betz, is a version of the LISP programming language based on the Common LISP standard with extensions for object-oriented programming.

PD9084 $12.00

ARChive Collection

A collection of tools for manipulating archives—multiple files combined and compressed into single library files for later extraction and use.

PD9094 $12.00

CAD-3D COLLECTION I

The first collection of complex objects created by Tom Hudson with CAD-3D.

PD9085 $12.00

REQUIRES: CAD-3D

PROFF

PROFF is a text formatter similar to popular mini-computer tools like RUNOFF and TROFF. PROFF takes input from standard ASCII text files with embedded formatting commands and produces fully-formatted output files.

PD9089 $12.00

STEREO STARS & SLIDE SHOW

New!

STEREOTEK OPTIONAL

Float through stereoscopic space with this hypnotic, animated starfield demo. Plus, over ten full-stereo slide pictures! Show your friends, then load them into DEGAS Elite and touch them up!

PD9099 $12.00

REQUIRES: STEREOTEK Glasses and DS Drive

MicroEMACS COLLECTION

MicroEMACS, originally developed by David Conroy, is a popular implementation of a useful subset of the EMACS text editor used on mini-computers.

PD9090 $12.00

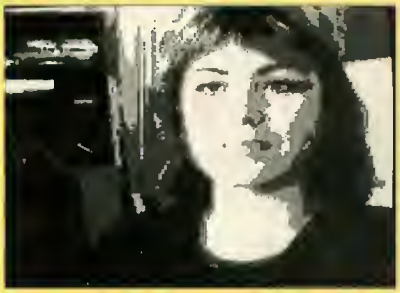
ST Software Bargains
See pp. 30-31

STart Back Issues
See p. 29

47

of the best Atari 8-bit programs available today!

SOFTWARE FROM
THE CATALOG



FREE BONUS! Order now and get a FREE DISK of pictures and extra character fonts.

All-time best-selling Atari paint program

RAMbrandt™

Atari Design Studio

by Bard Ermentrout

Imagine . . .the ultimate paint software. For under $20! Sit down with RAMbrandt and enter a design studio with the tools to make anyone a creative artist. It took our technical staff three hours to step through each of RAMbrandt's features. Use the built-in toolkit to enhance your own programs or picture files. Or just doodle for the joy of it! We barely have enough room to list all the power, but here goes:

- 5 graphics modes (7, 7+ (ANTIC E), and GTIA 9, 10, 11)
- Works with joystick, Koala Pad/Touch Tablet or both
- Horizontal and vertical coordinates always displayed
- Box, Circle/Ellipse, Rubber band line, Freehand plot, Text (4 sizes, any font—3 fonts included), Zoom, Mirror (vertical, horizontal, 4 way)
- Fill (solid, pattern, random, user-defined patterns)
- Unlimited user-defined brushes (5 pre-defined)
- Quilts and Tiles (user-definable color patterns—5 of each pre-defined)

BEST SELLER!

- Paint or Fill with any pattern, quilt, tile, or font
- 128 colors in any mode with easy one key DLI access
- Random/Probability/Exclusive-Or/Transparent "colors"
- Color Hunt Mode (paint over only the color you choose)
- Animate mode (up to 32 frames at any speed)
- Window mode—any or all of your picture: Rotate, vertical or horizontal flip (T-shirts), wipe, animate, scale (larger or smaller), cut and paste, rubber stamp
- Printer dumps for Epson, Star (Gemini), C. Itoh, NEC and compatibles
- Okimate 10 color printer dump supports color fine-tuning
- Load pictures from Movie-maker, Microillustrator, Micropainter, and Computer Eyes formats
- 130XE RAMdisk Support!

RAMbrandt
APD157 $19.95
REQUIRES: One Joystick and/or Koala Pad or Atari Touch Tablet

A 3-D Solid Object Modeler for RAMbrandt

SOLID OBJECT MODULE

by Bard Ermentrout

Now you can easily create 3-D objects with RAMbrandt. Start with 8 different primitives: Sphere, Torus, Cylinder, Spool, etc. Combine them to make complex structures. Then flip into RAMbrandt to complete your picture. This module will not rotate the objects, but it will do just about everything else: 4, 8 or 16 level grayscales. Halftones (random or up to 64 dithered patterns). Backlighting or point source lighting. Clipping window to use parts of objects. Undo command. Much, much, more. If you use RAMbrandt, you need the SOLID OBJECT MODULE.

SOLID OBJECT MODULE
APO182 $15.95
REQUIRES: 48K RAM, RAMbrandt

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800

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All 50 States 6AM-6PM PACIFIC TIME

PROGRAMMABLE spreadsheet for the XL and XE computers

CALC MAGIC

by Metamorphasis Development

LIMITED STOCK

This is a full power, fast spreadsheet presented in a much easier-to-use programmable, multi-menu package. Now you can have sophisticated facilities to really control a spreadsheet—and get a solid grip on your budget or business.

Features include:

- Built-in plain-English programming language. Build templates to reduce your keystrokes.
- Quickly test multiple "what if" conditions and determine actual effects.
- Pop-up menus let you choose commands easily, avoid complex command sequences.
- Supports DIF file transfer.

CALC MAGIC
AP0177 $24.95
REQUIRES: XL or XE Computer, 64K

THE ENHANCEMENT DISKS (A 2-disk set)

by Robert Wilson

Ever since B/GRAPH—the most powerful Atari business/graphics software ever—was released, rumors persisted that its co-author, Robert Wilson, had created a collection of super utilities and enhancements for the original program that, combined, made the whole set comparable to business-presentation systems worth hundreds of dollars on other computers.

Those rumors were true. For several years, Robert Wilson created, debugged, polished, and reworked his collection of utilities until they became four packed disk sides of programs and documents. Although it is possible to use many of these programs without owning B/GRAPH, THE ENHANCEMENT DISKS are primarily designed to run with B/GRAPH—which is available from Batteries Included.

THE ENHANCEMENT DISKS features include:

- Bubble charts for market segmentation analysis
- Opposed bar charts
- Segmented horizontal bar charts
- Loan amortization schedules
- Instant switching of plotted variables
- Covariance and correlation matrices

And THE ENHANCEMENT DISKS support the Atari 1020, Radio Shack CGP115, and Mannesmann Tally Pixy plotters for the ultimate in clear presentation. Plotter features include:

- Exploded pie charts
- Floating bar charts
- Plotting of algebraic expressions
- 17 factors per graph with overlays
- Left and right side scaling

THE ENHANCEMENT DISKS
AP0190 $19.95
REQUIRES: Atari BASIC
Recommended: B/GRAPH
B/GRAPH™ of Batteries Included

Organize ideas with the only outline processor for the Atari. Compatible with Word Magic, Atari-Writer, Paperclip and other word processors.

CREATIVE PROCESS Version 1.8

by Dave Tharsan

LIMITED STOCK

Outline processors have become indispensible authors' tools (you've seen them advertised for the Macintosh and IBM). CREATIVE PROCESS on the Atari is a tremendous aid in report writing—for business or school. Capture your ideas and turn them into *professional* documents. Reduce the time needed to get out a document, because speed is the key feature. It can help you manage your projects, make sense out of long meetings, and monitor works in progress. Plus, it's so flexible that it can be used as: an address and phone number filer, calendar, recipe data-base, and for organizing everything. Pop-up command windows let you concentrate on ideas. Undo key, adjust-able screen colors, utilities package, and *130XE RAMdisk* support are only a few of CREATIVE PROCESS'S huge list of features. Comes preconfigured for single and enhanced density. Capable of supporting your double-density DOS's as well. 100% compatible with Word Magic, Atari-Writer and Paperclip.

CREATIVE PROCESS
AP0151 $19.95
Optional: Printer, Word Magic

SPELL MAGIC

by Blue Collar Software

Also works with Atari-Writer and Paperclip!

Spell it *right—every time,* with this 34,000-word integrated dictionary. Get started fast with on-line help and simple menus. Install SPELL MAGIC and Word Magic together on one disk. *Also*—check documents created by other word processors such as Paperclip and HomePack, *and AtariWriter.* Check in context: SPELL MAGIC *always* displays your document in a window in the upper half of your screen. Add an unlimited number of expandable *personal dictionaries* (up to 10,000 words each). Updates your personal dictionary automatically while checking words. Counts words. Works with single or double drive systems.

SPELL MAGIC
AP0144 $19.95

Great moves . . . for all level players

Colossus Chess 3.0

The *Ultimate*Computer Chess BEST SELLER!

by Martin Bryant English Software UK

Here's a chess program with all the moves of a *chess master*, a *great chess tutor* or a *master tournament opponent*. Whether you're a beginner or a pro, COLOSSUS CHESS 3.0 is for you.

Dare to challenge the program that *outplayed* 20 of the best computer chess programs available.

- Unique two-screen dual display—current game and unique view of COLOSSUS's "brain." Watch COLOSSUS consider thousands of moves.
- On-screen elapsed-playing-time *clocks add realism*, excitement to Tournament mode (full tournament play).
- COLOSSUS teaches *you* to be a better chess player with simulation modes (infinite mode, problem mode, equality mode, average mode, all-the-moves mode, blindfolded mode). Adjust playing speed and style.

COLOSSUS CHESS 3.0
AP0161 $15.95
REQUIRES: 48K RAM

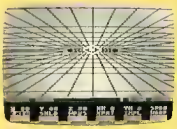
*Note: Colossus Chess was named "**. . . one of the best buys in chess programs today**" by **Analog** Magazine (Nov. '85).*

Stor Roiders was a great game . . . for its time.

LIMITED STOCK

XTAL(CRYSTAL) — AN ADVENTURE IN SPACE

by Dave Reese



A planet-threatening Ion Radiation storm has developed in the peaceful Canasion section. Your mission: destroy that storm.

The EXCALIBUR comes equipped with impulse and warp drives, transporters, phasers, communicators, shields, quadrant map display, and a spectacular 3D cockpit/navigation viewscreen.

XTAL (CRYSTAL)
AP0158 $15.95
STAR RAIDERS™ Atari Corp.

Joystick-busting Kung-Fu Action

CHOP SUEY BEST SELLER!

by English Software UK

An action-packed martial arts competition simulation. For anyone who likes thrill-a-minute competitive games. One or two players. Eight progressive levels, two speeds—normal and (for the insane) superfast. Killer scorpions add an unpredictable element. Fast, smooth animation and 29 on-screen colors add to the excitement.

CHOP SUEY
AP0162 $15.95
REQUIRES: One Joystick per player

". . . one of the best Atari buys of the year. Go get it grasshopper!" Atari User Magazine (UK)

The cord game of royalty . . . and society

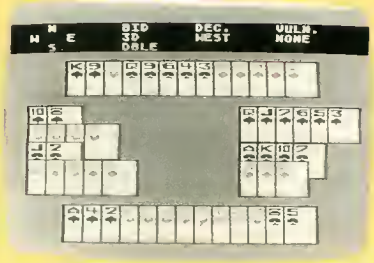
BLUE TEAM BRIDGE

by Walt Huber

A complete, tournament-level computerized bridge simulation. Now you can learn to play and play more often. Improve your game.

New players can learn to play right. Intermediate players can learn on advanced style of bidding. Advanced players can learn new bidding conventions to sharpen their skill. All will have a worthy competitor when you "can't get a foursome together." Your favorite game is always at your fingertips.

BLUE TEAM BRIDGE
AP0178 $15.95
REQUIRES: Joystick



Your computer can teach you the language of the ST.

DEEP BLUE C COMPILER

LIMITED STOCK

by John Palevich

MATHLIB

by Frank Paris

DEEP BLUE C is faster and more powerful than BASIC. C is one of the most transportable languages—runs on other computers with minor modifications. This all-purpose language is the *de facto* standard for the new generation of 68000-based machines like the Atari ST. Pointers, recursive functions, and high-level control structures make complete software systems easy to design, implement and maintain.

MATHLIB is a complete library of math functions for DEEP BLUE C. The 32 functions provide access to Floating Point and Trig operations. Now you can get both disks for the price of one!

DEEP BLUE C and MATHLIB
APD188 $19.95
REQUIRES: Text Editor like Word Magic

INTERLISP/65

by Special Software Systems

The Catalog is proud to offer INTERLISP/65, version 2.5, from Special Software Systems. LISP (LIST Processing) is the symbolic language of artificial intelligence applications, designed especially to logically manipulate structured symbols. It's different from any language you've ever used on the Atari!

INTERLISP/65 is a subset of the standard "INTERLISP" dialect of LISP. This version includes special enhancements so you can take advantage of the Atari's graphics and sound capabilities. Over 70 pre-defined functions are included, plus these features:

- Eight-digit, floating point arithmetic, including multiplication, division, exponential, and logarithms.
- PEEK, POKE, and XIO functions for access to monitor and hardware functions.
- STICK and STRIG for game controller input.
- Sequential disk file functions, including OPEN, CLOSE, PR#, IN#, NOTE and POINT.
- PAGE and TAB screen control functions
- Debugging facilities include BREAK and BAKTRACE.
- Example LISP programs on disk include the famous "Towers of Hanoi" puzzle which provides an excellent example of the power of recursive programming, plus "Doctor," a classic example of artificial intelligence applied to conversational programs.

And now, version 2.5 includes 21 new functions, a special graphics-buffer initialization sequence, plus the new TRACE utility for detailed debugging.

INTERLISP/65
APD191 $19.95

BASIC VIEW

by Softview Concepts

This is a utility all BASIC programmers will want. Beginners will learn programming faster, and veterans will find BASIC VIEW invaluable for debugging. Written entirely in machine language, BASIC VIEW provides a window showing the actual execution of your program code while the program is running. Even if your program uses full graphics displays, you can instantly switch—without program interruption—to the BASIC VIEW window, and then back to your program display. Beginners quickly see which line of code is affecting the program while it actually happens.

Features include:

- Joystick controlled for ease of use.
- Current line highlit during program execution.
- Adjust program execution speed using joystick "throttle."
- Variable Display shows updated contents of variables during program execution.
- Stop, skip to any line, then restart your program at any point.
- Variable Menu displays all variables, arrays, strings in alphabetical order.
- Examine dimensional array structures and elements, and memory locations.
- "Find" command for instant search of any variable or array element by name.

BASIC VIEW
APD192 $19.95

Power comba far Assembly language programmers

LIMITED STOCK

FLOATING POINT PACKAGE

by Louis J. Chorich III

EXTENDED D.D.T.

by Jim Dunion

FLOATING POINT PACKAGE makes math with MAC/65 as easy as BASIC. It gives you the tools to use the precision of Floating Point operations. Also includes Floating Point array management and Trig functions.
REQUIRES: Mac/65

EXTENDED D.D.T. (EXDDT) is the best debugger, made even better.The improvements include:

- Symbolic disassembler
- EXDDT completely relocatable
- NEXT instruction for single stepping past subroutines
- Includes mini-assembler
- Complete source code and all assemblers

FLOATING POINT PACKAGE and EXTENDED D.D.T.
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MAC/65™ Optimized Systems Software, Inc.
Ideal partners for MAC/65. Use FLOATING POINT PACKAGE to speed development.

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THE FAMILY TREE

by Horry Koons

Record and access up to 6 generations of historical family data with THE FAMILY TREE. Enter names, dates, places and facts; then print out an actual pedigree chart of your own lineage (on any printer). Use the joystick or keyboard to select any relative. Display three windows of pertinent information about that family member instantly. All historical data can be displayed and edited on-screen. Save up to 24 generations on one disk. Send printed charts to distant relatives—get their help in completing each family member's history. Preserve your family tree for posterity!

THE FAMILY TREE
AP0133 $19.95
REQUIRES: Atari BASIC
Optional: One Joystick

Finally, a flexible, full-featured database

DATA MANAGER XL

by William Bartlett

LIMITED STOCK

Here's a flexible, integrated data base manager/mini-word processor that's easy to use. Highly flexible features include: color-coded files, program handles up to 100 fields (indexable categories), each field as large as 120 characters. Quickly make changes with easy add and delete options. Print custom reports from existing files. An Index Manager function allows sorting and file rebuilding. Use with compatible AtariWriter and/or Word Magic for mail merge, form letters, or other letter/list processing needs! A special "Tools Manager" section features: database diagnostics and utilities plus a disk drive speed checker! How-to instructions are complete and detailed.

DATA MANAGER XL
AP0129 $19.95
REQUIRES: Atari BASIC

SHERLOCK 1050

by Dan Moore and Steve Ahlstrom

Get a fighting chance to restore crashed disks. Examine or edit any byte in any sector of your single or enhanced density disks (in HEX or ASCII). Disassemble (from the disk itself) any machine language file or autoboot disk and learn its secrets. Restore deleted files and salvage broken files with the Trace option.

SHERLOCK 1050
AP0155 $19.95

PRINTER DRIVER CONSTRUCTION SET

by John Eric Hinckley

Now AtariWriter is totally compatible with every printer. Comes with drivers for FX-80/MX-80, 10X/SG-10, NEC 8023, Prowriter, 1027, HR-25. Build your own drivers for other printers.

PRINTER DRIVER CONSTRUCTION SET
AP0131 $19.95
REQUIRES: AtariWriter cartridge

CHAMELEON CRT TERMINAL EMULATOR

Version 4.03

Written in machine language
by John Palevich

LIMITED STOCK

Turn your Atari into a variety of computer terminals! Five popular types: Glass TYY, ADM-3A, DEC VT-52, IBM 3031, ASCII, plus a test terminal. Software supports tab, backspace, line feed (on/off), form feed, bell signal, speeds up to 9600 bps, plus a lot more! Wide-screen 80 and 132 column emulation. You've never seen anything as fast and smooth as the vertical *and* horizontal fine scrolling. All these features make CHAMELEON flexible enough to use with UNIX operating systems. Perfect for logging on to non-standard systems, such as MCI MAIL and DELPHI, because you can customize *all* terminal parameters. Autodials and stores up to 16 phone numbers. Supports file transfers and features on all Atari 850-interface, 835, 1030, and XM301 modems. Version 4.03 includes Columbia University's Kermit file-transfer capability, in addition to total compatibility with the popular Xmodem protocol.

CHAMELEON CRT TERMINAL EMULATOR
AP0113 $19.95
REQUIRES: 48K RAM

The only programmable modem software available

BACKTALK 1.2

by Steve Ahlstrom, Dan Moore and Dan Curtis

BEST SELLER!

Designed by the authors of Paperclip, Synfile+, and Sherlock 1050, BACKTALK is powerful and easy to use. "Script" files can be executed with the touch of a button. Or they can run automatically—even in the middle of the night while the phone rates are lowest. Now you can wake up in the morning and read your email—with your morning paper—without having to download anything yourself! Bulletproof file transfer. Three protocols: Xmodem (with or without CRC), Amodem, and Xon/Xoff. Supports 300, 1200, 2400 baud modems, ASCII/ATASCII translation, full and half duplex. CB "chat" window provides uninterrupted communication during on-line conferences. Smooth scrolling text reduces eyestrain. Friendly pop-up menu makes entering commands a snap.

Now you can use BACKTALK with every modem. Supports Hayes-compatibles and Atari 1030/XM301. There's even a way to load your own modem handlers. 130XE users will love the way they can download files into the RAMdisk.

BACKTALK 1.2
AP0154 $19.95
NOTE: Some early 810 disk drives will not work reliably with BACKTALK's high speed I/O.

This 2 DISK SET gives you complete command of your dot matrix printer.

PICTURE PLUS 3.0 and LISTER PLUS 1.5

Non-Standard Magic!

by Chet Wolters

BEST SELLER!

PICTURE PLUS is the total graphics utility combined with the ultimate ATARI screen dump. Now Version 3.0 is faster and works with nearly any DOS. It even works with RAMdisks.

Translate pictures between MicroIllustrator, SuperSketch, Paint, Fun With Art, 3/Graph, Movie Maker, Micropainter, Atari Light Pen, Atari Touch Tablet, Koala Pad, LOGO, Computer Eyes, Orawit, RAMbrandt (when converted), Graphics 7, 7+, 8, 9, 10, 11, and 15.

Work with the entire picture or just the area you want PICTURE PLUS will merge two pictures, reverse a picture left to right (for T-shirts), turn it upside down, move it in any direction, make a negative, or change colors. Add text anywhere on the picture, in any color(s) and any font(s), in 6 sizes.

PICTURE PLUS will print screens in 4 sizes from 3" x 4" to 8" x 14". Directly supports printers compatible with Epson, Gemini, Prowriter, Okidata, color IOS, and color Mannesmann Tally. Custom printer installation program handles most others.

LISTER PLUS will print anything exactly as it appears on your screen including control characters, inverse letters, custom character sets, and character graphics. These two packages formerly sold for over $30 each.

PICTURE PLUS and LISTER PLUS
APO179 $19.95
REQUIRES: 48K RAM, Atari BASIC
Optional: Dot Matrix Graphics Printer

Simulate a trip to the Moon.

ORBIT—A TRIP TO THE MOON

BEST SELLER!

by John D. Reagh

Dock with the Space Station to get supplies, then head for the Moon. Establish a low altitude orbit, detach the landing module and descend to the lunar surface. This is a serious simulation of a true mission. Fuel consumption, life support systems, orbital position, altitude, rocket burn time, thrust vectors, radial velocities, orbital constants—keep track of them all. On-board ship's computer instantly plots new courses.

Designed and written by a Lockheed aerospace engineer. Complete with documentation that's educational too.

ORBIT-A TRIP TO THE MOON
APO168 $15.95
REQUIRES: Joystick

The RAMbrandt of character graphics

ENVISION

by Dorren Schebek

Create giant, multi-screen, 8-way scrolling pictures. Build effortless animations (up to 128 frames at 10 speeds). There has never been anything like ENVISION before. Did you think character graphics were blocky, ugly substitutes for the real thing? Take another look at this screen shot. Graphics 0. And in real life, it's animated.

ENVISION has over 50 commands giving you total control over the Atari's 6 incredible text modes. Print out your pictures, do fancy typesetting. ENVISION also supports GTIA modes 9 & 11. A special utility converts micrascreens to character graphics that are indistinguishable from the original. ENVISION is a brand new art medium and much more. It will create standalone pictures or produce BASIC and Assembler SOURCE CODE, a programmer's dream come true. On the 130XE, ENVISION supports 16 simultaneous fonts.

ENVISION
APO185 $19.95
REQUIRES: Joystick
Optional: BASIC, MAC/65, SynAssembler, Epson-compatible printer

Mercator Projection

Perfect for Geography, Science, HAM Radio, History, Current Events

EARTH VIEWS

by R.G. Wilson

EARTH VIEWS is a *world atlas*—an *electronic globe*—an exciting adventure *game*. Yes, it's all three in one. Call up many different maps and views of the Earth instantly. Includes detailed hi-res maps and projections linked to a "Gazeteer" of *world place names.*

Rotating Globe

In the *game:* you fly into the Bermuda Triangle and go on quests to exciting places. Detailed screens display longitude and latitude, lots of colorful information.

EARTH VIEWS
APO141 $19.95
REQUIRES: Joystick

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8-Bit Public Domain

All programs in this series sold as is. There's almost no documentation included, except what's built into the programs themselves. Therefore, you may need some expertise in order to use the products properly. Because this is public domain software, the Customer Service Department cannot provide the same type of service as for programs we publish ourselves (i.e., copyrighted Antic software). However, all programs have been tested at Antic and will perform.

TRIVIA QUIZ

The *ultimate* Trivia Game! 100% machine language. Play alone or with 2 friends (2 on XL/XE). *Plus* create your own Trivia Files (over 350 questions per disk—730 with double density). Includes instructions and Assembly SOURCE CODE.
PD0072 $10.00

THE RAMBRANDT COLLECTION

Now you can design your own special effects slide shows for RAMbrandt pictures. Choose a different dissolve for each picture: horizontal or vertical wipes, pixel dissolve, spin, telescope, and five others. Change the speed of the dissolves, mix graphic modes, repeat pictures or dissolves in any order. Supports 130XE RAMdisk, comes with a selection of the best RAMbrandt art. (RAMbrandt not required.)
PD0073 $10.00

FIX XL (PD TRANSLATOR)

Run early 400/800 software on your XL or XE.
PD0026 $10.00

DOS 4.0

by Michael Boroll

Here it is—the DOS that Atari, Inc. spent over $100,000 on and never released. Code named QDOS, it supports single, 1050 (enhanced), and double density drives. Single drive systems require minimal disk swapping. Docs included in Atari's 100 screen online (Help) system. DOS 4.0 is fast—two times faster than DOS 2.0, three times faster than DOS 2.5.
PD0067 $10.00

ICON GRAPHICS EDITOR

by Gregg Tavares, The NightHawk Group

Draw your own Print Shop icons with this advanced paint program. Use this fabulous "MacPaint"-style program to create your own libraries of icons. Full-featured drawing program includes user-definable fill and a smart brush which can AND, OR or XOR with the background.
PD0088 $10.00
REQUIRES: Print Shop
Print Shop™ Broderbund Software

VT100 TERMINAL EMULATOR

Turn your Atari into a DEC-compatible 80 column VT-100 graphics terminal. Works with Hayes-compatible modem and interface. No other hardware needed.
PD0037 $10.00

ANTIC FORTH

Learn the fast, compact FIG-FORTH language. Double-sided disk includes tutorial and editor.
PD0020 $10.00

RADIO & ELECTRONICS (JACE)

Another great JACE collection. This one will teach you Ohm's law, satellite orbit prediction, and Morse code. It also includes a YAGI antenna designer, three resistor design programs, an LC circuit computer and HAM programs.
PD0064 $10.00

130XE HI-RES DESIGNER

For 130XE owners only. R-DRAW, a powerful new Mode 8 paint program that has lots of goodies like spray paint, auto-antifacting, 4 text sizes, stor fields, L-R reverse (for T-shirts), and more. R-DRAW is so good that, if it had run on all the machines, it would've been accepted for APX.
Special: includes the BASIC SOURCE CODE for this compiled program.
PD0070 $10.00

AMIS XM10.BBS from M.A.C.E.

A full-featured bulletin board for the 835, 1030 and XM301 modems. Version 4.5PD supports the auto answer on the XM301. The other modems will require an easy-to-build ring detector (instructions included). Join the telecommunications revolution with this easy-to-use and easy-to-maintain BBS.
PD0080 $10.00

COMPUTER USING EDUCATORS SOCIETY (C.U.E.S.)—San Mateo

Official Education Packages from teachers who use Ataris. EDPACK #1 includes world geography, states and capitals, French and English Hangman, math games. EDPACK #2 has spelling bee, metrics, advanced math, and the famous Function Machine.
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PD0044 $10.00
C.U.E.S. EDPACK #2
PD0045 $10.00

1030 EXPRESS/ TSCOPE 850 EXPRESS/ TSCOPE MPP EXPRESS/ TSCOPE

Keith Ledbetter's brilliant modem program, now available for all modems: 1030 EXPRESS for Atari 835, 1030 and XM301; MPP EXPRESS for the Supra/MPP 1000 series; 850 EXPRESS for modems using the 850 (or compatible) interface. *Bonus:* each comes with the correct version of TSCOPE/MSCOPE so you can access the R.I.E. VIDTEX graphics on Compuserve.
1030 EXRESS/TSCOPE
PD0081 $10.00
850 EXPRESS/TSCOPE
PD0082 $10.00
MPP EXPRESS/TSCOPE
PD0087 $10.00

ASTRONOMY & METEOROLOGY (JACE)

The Jacksonville Atari Computer Enthusiasts (JACE) have collected these wonderful programs for amateur astronomers. Includes an observation simulator for tracking objects in the solar system, a planetarium prototype, a planet tracker, and much more.
PD0063 $10.00

PD MICROPAINT ARTIST

(A.C.A.O.C.)—BBS: 714-731-6523

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Play Poker, Cribbage, Blackjack and more! Test your skill!
BB9004 WAS...$39.95 NOW ONLY...$15.95!

SPECIAL ST VALUES!

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Transform your ST into an expert on any subject. EXPERT OPINION creates production-rule knowledge bases; GEM based so you don't need to learn a programming language. BONUS application disk on gemology included. Please note this is a sophisticated computer science tool requiring study to use effectively.
BB9012 WAS...$99.95 NOW ONLY...$59.95!

DISK DOCTOR by Dan Matejka
Disk zapped by a power surge? Wrong file in the trash can? DISK DOCTOR will make recovery of your lost data as painless as possible. You can even use its built-in GEM disk editor to personalize your software's menus and error messages. It's the perfect file repair utility and a valuable programming tool.
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STAR STRUCK--THE ASTROLOGER by Harry Koons
This GEM-based celestial workhorse instantly creates charts using formulas for the nine most popular historical house systems. If you don't know the coordinates of your birthplace, just click on the U.S. or world maps! STAR STRUCK works in color and monochrome and comes with loads of extra fonts.
BB9014 WAS...$24.95 NOW ONLY...$19.95

As you can probably tell from reading the Catalog, we Antic folks are very proud of our products, and we're particularly proud when we receive letters from you.

ON A-CALC PRIME:

AC PRIME is the spreadsheet that I have been waiting for. It combines the power of VIP Professional with a GEM interface so good I can (almost) operate the spreadsheet entirely with the mouse if I want. And the SIDEWAYS option prints directly from the program, instead of from a separate utility. I bought a new EPSON-compatible printer just to use the sideways feature. Combined with A-CHART, you've created an unbeatable mix of productivity and value.

Richard Thieman
Virginia Beach, VA

ON PHA$AR:

When I bought an Atari ST nine months ago, one of the major goals I had in mind was control of finances. After two disappointing and inadequate programs, I decided to try again with PHA$AR, on the strength of an advertisement and a review in ST Applications.

It is one of the most impressive programs I have ever seen: everything I had been searching for and more--versatile, easy to use, and superb documentation. Software of this caliber makes computer ownership both a pleasure and a valuable asset.

Darrel W. Orwig
Long Beach, CA

ON BASE TWO:

I recently purchased your program BASE TWO. As a former Mac owner who used REFLEX by Borland, let me say I found your program much easier to use.

Preston Lindey
Toledo, OH

ON FLASH:

Dear Publishers of Flash:

Thank you thank you thank you thank you thank you thank you thank you (etc.).

Michele Gray
Sausalito, CA

Thank *you* and keep in touch!

Frank J Ciminesi

Fidez Bitwin

At publication time, the Cyber Studio is being used by:
- General Motors (Project Trilby division)
- Rockwell Space Systems (Space Station division)
- Industrial Light and Magic (Lucasfilm)
- Forensic Computer Graphics, Inc. (accident reconstruction)
- General Dynamics, Ft. Worth (F-16c human factors design)
- Yale University (Dept. of Physiology exchange program with Shanghai University, China)
- Disneyland (computer displays for Star Tours)

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